Chemical Week

April 17, 1954

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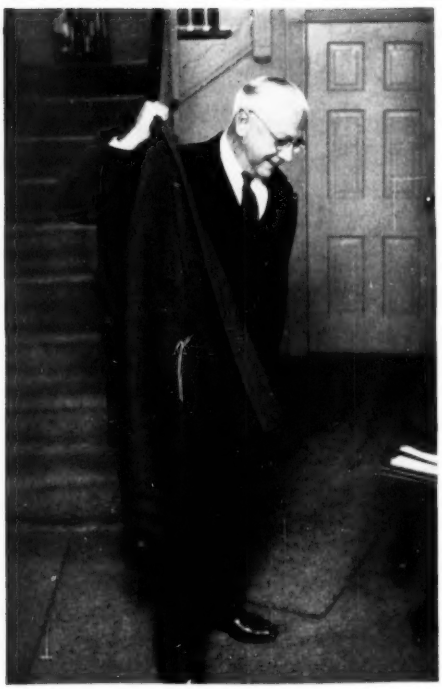

Davison's Geiger: His varied activities typify new breed of chemical presidents . . . . p. 22

Keep your eye on TVA-private utility feud for clues to future production costs . . . . . p. 46

Labs, like plants, can be safe where there's conscious planning, constant effort . . . p. 58

Housing boom underpins potential $5.5-million market for biocatalytic sewage disposal aids p. 72

There's a big future but hurdles aplenty for calcium metal p. 87

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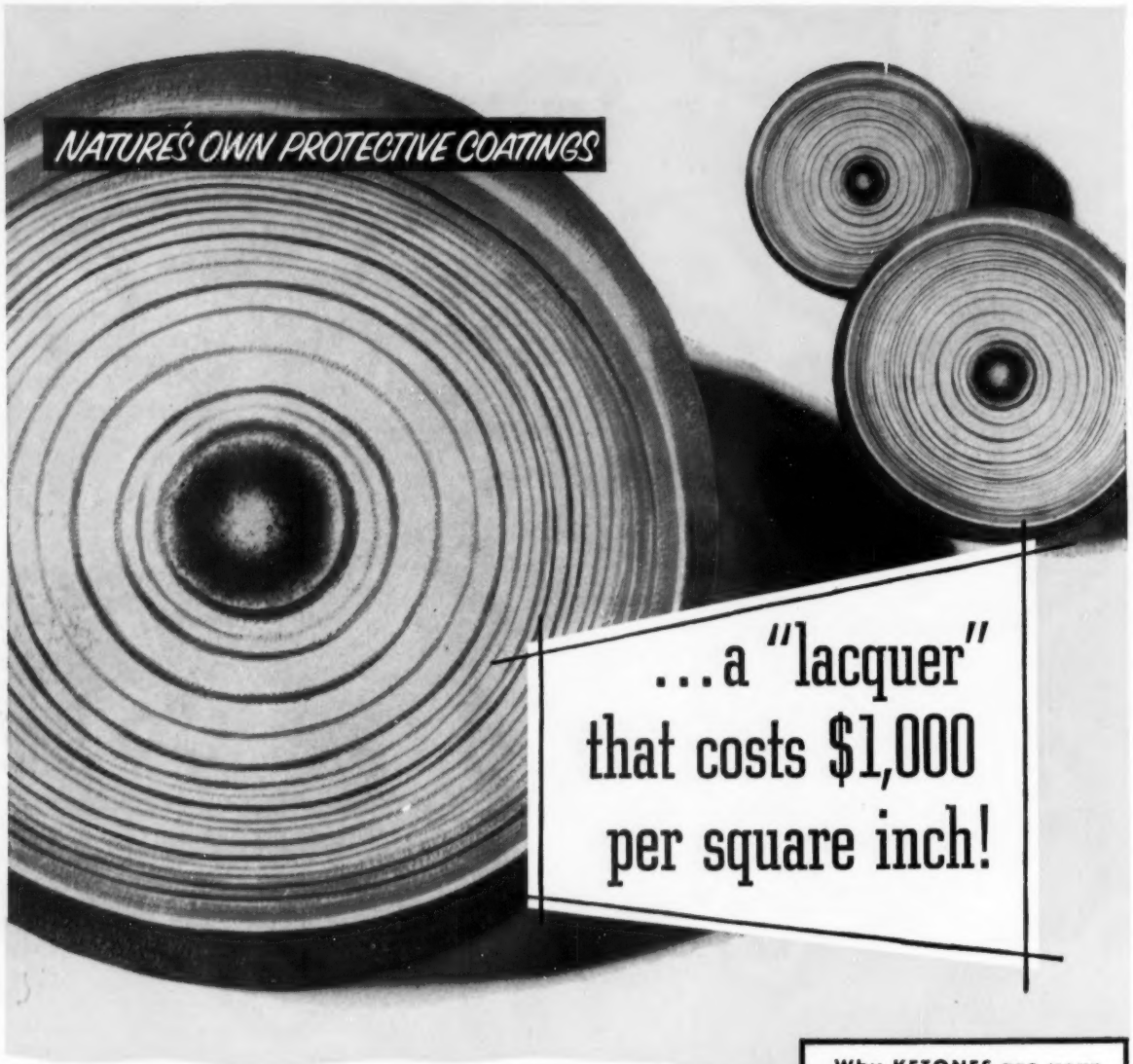

WHEN AN OYSTER'S delicate body is irritated by an invading grain of sand, it surrounds the irritant with *nacre* . . . a smooth, opalescent protective coating.

As the oyster deposits successive layers of nacre around the irritant, a pearl is born. The cross-section (shown above) looks like an onion. But there the resemblance ends, for a fine large pearl may be worth a thousand dollars and more per square inch of surface!

Man-made pearloid lacquers come surprisingly close to rivaling the natural beauty of the pearl. In decorative coatings, such as these, Ketone solvent systems offer ease of formulation, low-viscosity solutions, higher solids capacity, and *more lacquer* per pound of solvent.

The Shell "quality group" of solvents includes MEK, MIBK, MIBC, and IPA . . . for both nitrocellulose and vinyl lacquers. Your Shell Chemical representative will be happy to explain the important advantages of using Ketones in your lacquers.

Illustration from a photo, courtesy Gemological Institute of America.

Why KETONES are your best solvent buy...

When you buy by the pound and sell by the gallon, Ketones give you more for your money because each gallon weighs less.

Ketones give you *quality*, too . . . permit you to formulate at top solids concentration for greater covering power.

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The Nitrile
that cures faster without sulfur

OIL- AND HEAT-RESISTANT PARTS are made faster and better with CHEMIGUM. Easier processing, quicker curing and superior physical properties (see table) are the reasons.

COMPARISON OF PHYSICAL PROPERTIES — CHEMIGUM vs. SIMILAR NITRILES

Minutes Cure @ 305°F.	30/60	15	30/60	20/40
Type of Rubber	*Nitrile "A"*	*Nitrile "B"*	*Nitrile "C"*	*CHEMIGUM N3NS*
Tensile, psi	2425/2675	2150	2450/2425	2950/2750
Elongation, %	495/525	585	360/350	610/520
300% Modulus, psi	1400/—	1025	1825/1875	1400/1525
Hardness, Shore "A"	68/65	63	63/63	67/69

Note: Same sulfurless compound used.

And gives you better physical properties with less acceleration.

Just look at the table above. A basic oil-resistant compound was used. Sulfur was omitted to obtain high heat-resistance. All the other rubbers required more acceleration. Nitrile "C" needed considerably more plus some sulfur for proper cure. Yet the CHEMIGUM compound cured much faster and gave higher tensile, elongation and hardness.

Moreover its heat-resistance was equal to or better than that of the others. So was its solvent-resistance. And the CHEMIGUM processed much easier to give you still another good reason for trying this use-proved nitrile with its new, light color and smaller bale. Which of your products can it improve?

For details, write to: Goodyear, Chemical Division, Dept. P-9417-A, Akron 16, Ohio.

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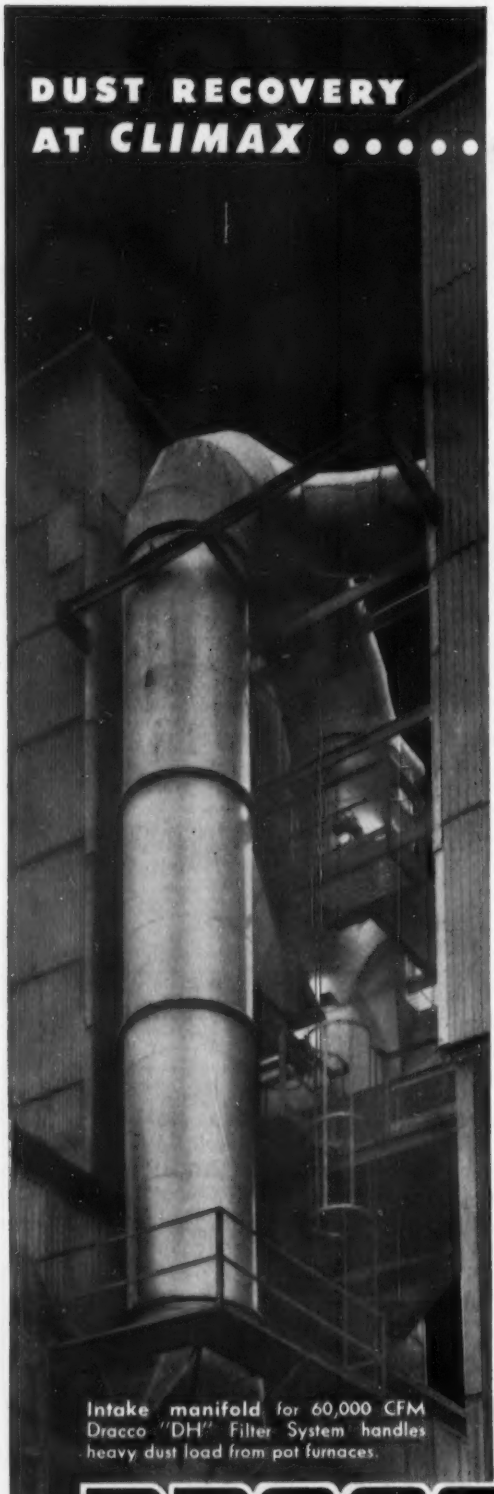
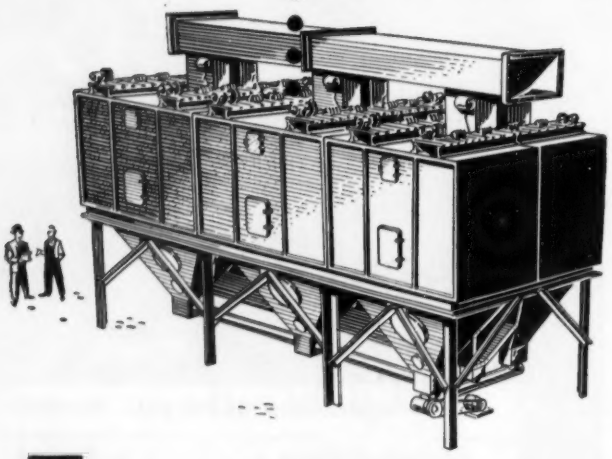
DUST RECOVERY AT CLIMAX .....A JOB FOR

GIANTS!



Intake manifold for 60,000 CFM Dracco "DH" Filter System handles heavy dust load from pot furnaces.



At the Climax Molybdenum Co., Langeloth (Pa.), the complete recovery of product fines presented no ordinary dust problem. Filters which would be veritable giants were needed to control ferromolybdenum fumes—tough to handle because of their light weight and voluminous characteristics.

To solve Climax's problem, Dracco custom-engineered an entirely new Dracco Dust Control System—the extremely rugged "DH" Filter. Designed for continuous, automatic service, these Dracco giants operate under heavy-duty conditions.

At Climax, twelve Dracco "DH" Filters with a capacity of 60,000 CFM are integrated with process equipment used in the manufacture of metallurgical compounds. While operating only intermittently, they capture some one-and-a-half tons per day of valuable ferromolybdenum fumes. All reclaimed materials are returned directly to process for re-use.

Whether your dust control or recovery problem is complex or simple, rely on Dracco for the profitable, engineered-for-efficiency solution. Call in a Dracco engineer today!

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Dracco Bulletin 800 contains complete technical information on "Industrial Dust Control and Recovery". Write for your copy today.

DRACCO *Performance Proved*

Airstream **CONVEYORS · DUST CONTROL EQUIPMENT**

Chemical Week

Volume 74 **April 17, 1954** Number 16

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Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc. James H. McGraw (1860-1948), founder. **Publication Office:** 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices; McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Donald C. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 for a year; $10.00 for two years; $12.00 for three years. Other Western Hemisphere Countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the act of March 3, 1879. Printed in U.S.A.

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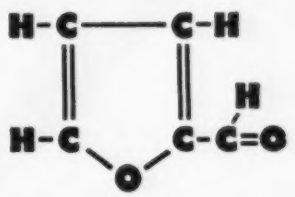
Furfural
will help you



DESCRIPTION
An amber-colored, mobile liquid with a pungent odor like oil of bitter almonds.

TYPICAL ANALYSIS

Specific Gravity (20/20°C.)	1.161
Boiling Point, °C. (Todd Still), 744 mm.	160 (98%)

OTHER PROPERTIES

Freezing Point, °C.	−36.5
Flash Point (open cup) °C.	56.8
Refractive Index (n 25°/D)	1.5230
Surface Tension at 20°C. (dynes/cm)	49.
Viscosity (Centipoises)	
38°C.	1.35
54°C.	1.09

In addition to properties it possesses in common with other aldehydes, furfural exhibits a chemical behavior peculiar to the unsaturated furan nucleus. As a consequence it is commanding increasing interest as a chemical intermediate.

Its versatility, its high purity, and its low price are reasons why you should evaluate furfural in processes and products involving its use as a selective solvent, resin ingredient, general solvent, wetting agent, and chemical intermediate.

Write for Bulletin 204. A few words as to the nature of your interest will enable us to select for you other pertinent literature. Address request to nearest office listed below.

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Room 534E, 120 Wall St., New York 5, N. Y.

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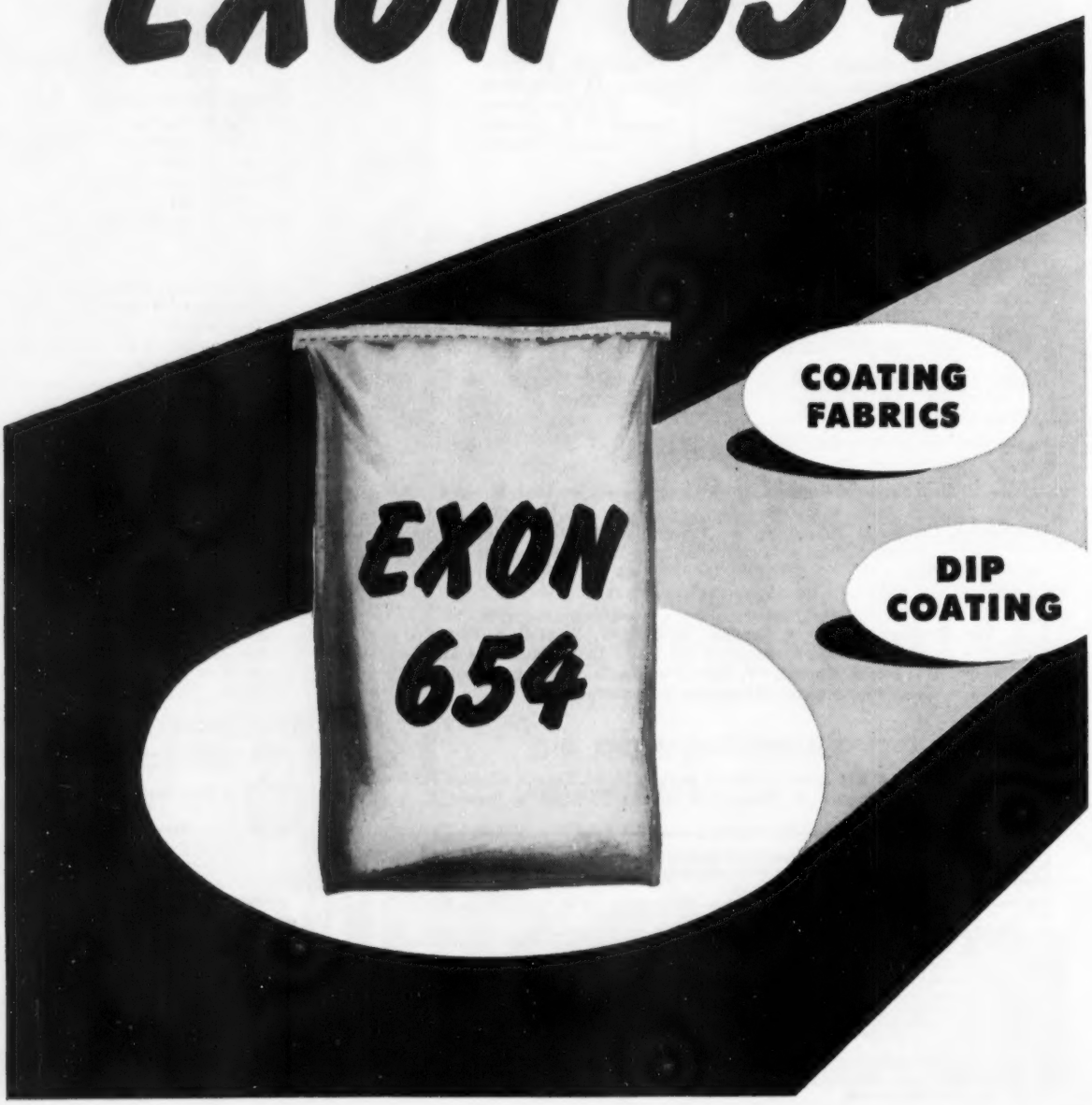
WORTH INVESTIGATING! THE PROCESSORS REVEALED IN

Firestone

EXON 654



NEW OPPORTUNITIES FOR

Let us send you a sample of this new plastisol resin that needs no grinding!

Be sure to visit the Exon booth at the forthcoming shows:

Space 341

The Sixth national plastics exposition Cleveland June 7-10 1954

Space 128

Basic Materials Exposition

PHYSICAL PROPERTIES OF
EXON 654

Readily dispersed in plasticizer by simple stirring—no grinding necessary.

Form	**Fine White Powder**
Specific Gravity	**1.40**
Average Relative Viscosity	**2.65**

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Let us send you a sample of **Exon 654** for any application that calls for coating fabrics ...paper...dip coating, slush molding, foaming operations or casting thin films.

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OPINION . . . . .

Their Own Medicine

To the Editor: This is to express appreciation for the excellently presented news article, "Harnessing the Work Horses," (*March 20*) . . . which outlined the research being done by instrument makers . . .

I can't tell you how thrilled one is at your editorial treatment of such a subject that is very dear to the hearts of the members of our industry.

Our people have always felt that the best sales argument that they could have in interesting other industries in research and development was their own progress as an industry . . . based upon much better than average investment in this phase of their production.

Your story . . . conveys this message superbly . . .

James R. Irving
Scientific Apparatus Makers Assn.
Chicago

Gathered with Care

To the Editor: Your article on chlorates (*March 20*) . . . I found . . . interesting and well written. I think you are to be complimented on the care with which you gathered your information.

Warren H. Moyer
President
Chipman Chemical Co., Inc.
Bound Brook, N. J.

Want to Join?

To the Editor: . . . I enjoyed reading the opinions expressed by Mr. Cremers of Wyandotte Chemicals in your March 20 issue . . . and especially his assertion that sales managers have to get out in the territories and help beat the bushes for business . . .

It reminds me of a club I heard of recently—or sort of an informal organization: the YCSASOYA group . . .

It is for those sales people who believe that You Can't Sell Anything Sitting On Your—. Well, you can't sell anything just sitting . . .

J. T. Brunchelle
San Francisco

Global Incentives

To the Editor: . . . It is indeed heartening to see the present Administration moving toward a more logical tax structure. Insufficient attention has been paid in the business press, I think, to current legislative proposals to alleviate the tax burden on profits from foreign investments. There is no better way to raise the living standards in underdeveloped areas, in my opinion, than for American firms to bring their capital and their efficient production and distribution methods into these areas—eventually reducing, I should think, the need for American aid.

Also, it is logical that foreign investments, since they require a proportionally greater administrative effort and since the risks are somewhat higher, should offer the possibility, at least, of proportionally greater profit.

It is not lack of profit incentive, however, but fear of expropriation or other unilateral action by foreign governments that is the most potent deterrent to extranational investment. It would seem that any diminution of the tax burden should be accompanied by guarantees against such actions by the U.S. government . . .

L. F. Taylor
Economics Consultant
San Francisco

John Loves Mary

To the Editor: The writer thoroughly reads, enjoys and uses Chemical Week, and has for a number of years.

The citation . . . (*March 27*) concerning a new lipstick stain remover does his heart good, for the bane of his existence is the removal of "John loves Mary" (or worse) messages of lovers (or worse) the world over who aren't satisfied with a tree on which to declare their devotion (or worse), but are so desirous of declaring it for all time that they choose monuments or buildings of stone.

It is a difficult problem to remove these stains, for even if the color goes, the waxy ingredients remain in the stone, do not absorb moisture, and appear as light ghosts when the surrounding stone gets wet. So even when it rains, all posterity knows that "John loves Mary" (or worse).

Any suggestions?

John Curtis
Research Director
Vermont Marble Co.
Proctor, Vt.

"All the world loves a lover"—except a research director for a marble firm.—Ed.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

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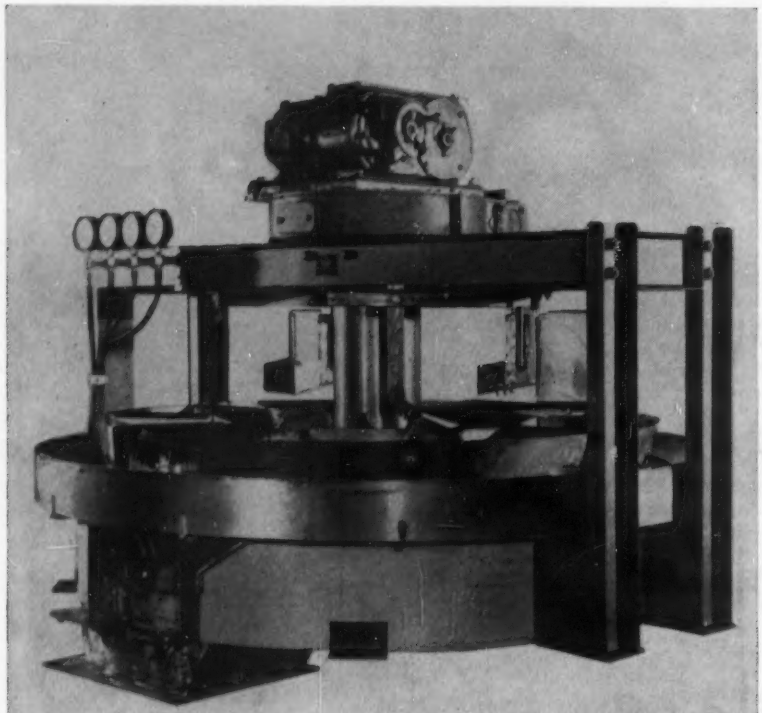

Eimco's New Pan Type Filter

The pan type filter developed by Eimco incorporates all the best features of any horizontal type filter unit in that it uses vacuum and gravity flow to accomplish the dewatering of the slurry.

But Eimco's pan filter also provides a smooth, quick rollover discharge that leaves the pan clean—ready for another full capacity charge. Slurry may be fed at as many as three points in this fast dewatering unit to assure full cake capacity in the pan every rotation thereby giving many times the capacity per square foot of filter area.

The drive is up out of the way of any spillage and the entire unit fits into a minimum of space.

This unit is offered for dewatering of materials that are essentially slime free and require intensive washing. The machine provides means for sharp separation of strong and weak liquors.

The filter media is generally quite open since in the ideal application slime is not present.

Eimco Engineers will be glad to work with you on your filtration requirements and recommend the best type unit for your particular job.

Write for information to The Eimco Corporation, P. O. Box 300, Salt Lake City, Utah.

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You Can't Beat An Eimco

OPINION. . . . . .

DATES AHEAD

American Zinc Institute, annual meeting, Statler hotel, St. Louis, April 20-21.

Assn. of Consulting Chemists and Chemical Engineers, symposium and banquet Belmont Plaza hotel, New York, April 27.

Electrochemical Society, annual meeting, LaSalle hotel, Chicago, May 2-6.

Air-Pollution Control Assn., annual meeting, Patten hotel, Chattanooga, Tenn., May 3-5.

Forest Products Research Society, national meeting, Grand Rapids, Mich., May 5-7.

National Cottonseed Products Assn., anual meeting, Shamrock hotel, Houston, May 7-11.

Chlorine Institute, spring meeting, Seaview Country Club, Absecon, N.J., May 11-12.

American Institute of Chemists, annual meeting, Hotel Berkeley-Carteret, Asbury Park, N.J., May 12-14.

Flavoring Extract Manufacturers' Assn., annual convention, Biltmore hotel, New York, May 16-19.

American Institute of Chemical Engineers, spring national meeting, Kimball hotel, Springfield, Mass., May 16-19.

Chemical Market Research Assn., annual meeting, Statler hotel, New York, May 20.

Chemical Specialties Manufacturers' Assn., midyear meeting, Netherlands Plaza hotel, Cincinnati, May 23-25.

Technical Assn. of the Pulp and Paper Industry, paper coating conference, Poland Spring House, Poland Spring, Me., May 24-26.

Manufacturing Chemists Assn., annual meeting and joint outing with SOCMA, Greenbrier hotel, White Sulphur Springs, W.Va., June 3-5.

Society of the Plastics Industry, exposition, technical conference, Public Auditorium, Cleveland and Statler hotels, Cleveland, June 7-10.

American Plant Food Council, annual meeting, Homestead, Hot Springs, Va., June 10-13.

American Society for Testing Materials, annual meeting, Sherman and Morrison hotels, Chicago, June 13-18.

National Fertilizer Assn., annual meeting, Greenbrier hotel, White Sulphur Springs, W.Va., June 14-16.

Chemical Institute of Canada, annual conference and exhibition, Royal York hotel, Toronto, June 21-23.

American Drug Manufacturers Assn., annual meeting, Lake Placid Club, Lake Placid, N.Y., June 28-30.

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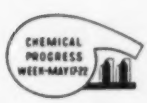

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CHEMICAL PROGRESS WEEK-MAY 9-15

NEWSLETTER

Despite the business downturn, wage boosts continue. Du Pont, a bellwether for the industry because of its large number of employees, reinforced the pattern—6¢/hour hikes—established so far this year (CW, April 3, p. 14) by granting raises of 5-7¢, depending on job classification, to workers at its Chambers Works, Deepwater, N. J. Salaried employees under wages and hours regulation received comparable increases. Bargaining agent for the workers is Chemical Workers Assn.

•

Du Pont also figures in the news this week for the sale of its industrial reodorant ("Alamask") business to Rhodia, Inc., New York. The same firm last October bought Du Pont's aromatics and compounding business in the soap, cosmetics, perfume and flavoring fields.

•

The chemical business still looks good to outside firms seeking to diversify. Latest recruit is Beech-Nut Packing Co., Canajoharie, N. Y., which last week formed a chemical department to manufacture polyvinyl acetate resins—both solid and emulsions—for textiles, adhesives and coatings.

•

Although Reconstruction Finance Corp. plans to get out of the synthetic rubber business, it will still support research until June '55 at least—albeit on a smaller scale. The fiscal year allotment starting July 1 is $4,160,000—about 20% less than the $5,131,000 budgeted this year and even further short of the $5.2 million proposed by President Eisenhower in his January budget message.

Proportional reductions will be made in each of the four research sectors: the industry-operated, government-owned pilot plants; the government-owned laboratory at Akron; university and private laboratory research; and tire testing.

•

Companies with employees' stock-purchase plans—and those considering such plans—will want to keep close watch on the Richfield Oil case, now on the National Labor Relations Board's docket.

Richfield offered a plan to its employees, who are represented by the CIO Oil Workers. Each worker would pay monthly not less than $5 nor more than 5% of his salary or wages; the company would add not less than 50% of the employee's contribution.

The union wanted to bargain for better terms, but the company contended that it was not a bargainable issue. The union then brought its complaint to NLRB, whose general counsel agreed with the union that the plan was actually a form of compensation and hence subject to collective bargaining.

•

Mathieson Chemical last week took over U. S. Industrial Chemical's antifreeze personnel, will market private-label, U.S.I. Permanent glycol, and Super Pyro methanol antifreezes. Mathieson will utilize its packaging plants at Chicago and Rochester for the purpose.

As yet, however, Mathieson has not purchased any of the U.S.I. facilities and the latter will continue to make and package antifreeze for Mathieson.

Giving substance to an earlier report (CW Newsletter, Feb. 13, '54), General Aniline & Film's Jack Frye notified stockholders this week that his firm will build a $6-million acetylene-derivatives plant in Calvert City (Ky.).

To be engineered and constructed by New York City's Lummus Co., the plant will use acetylene supplied by nearby National Carbide. Actually, the new plant will be a mammoth scale-up of GAF's Linden (N. J.) pilot unit, which has been pioneering some techniques of processing for high-pressure acetylene.

Initially, says Frye, production will center around the PVP family. That would include propargyl alcohol, butanediol, butynediol, butyrolactone, pyrrolidone, methylpyrrolidone, vinylpyrrolidone and polyvinylpyrrolidone. But, he adds, vinyl alkyl ethers and esters and their polymers are also under sales development and they will be produced "in a subsequent step" at Calvert City.

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The motorist besieged by claims for improved gasolines had two more to choose from this week.

• Sun Oil Co. came out with a gasoline that, it said, equals or surpasses the performance of premium-priced fuels. The Sun gasoline is now on sale at stations in 18 Eastern states and in the District of Columbia. The Sun move puts an end to speculation that it would abandon its one-price policy.

• Standard Oil of California brought out a detergent-action gasoline. Standard's new product contains an undisclosed, but presumably small, quantity of an unrevealed commercial detergent. The idea is to eliminate the formation of carburetor deposits and to remove those that have already formed.

Standard claims that the biggest single cause of repair jobs in automotive shops is carburetor trouble caused by such deposits. It will use the detergent in both its regular and premium fuels and, like Sun, will not raise prices.

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Got a stake in soil conditioners? If so, you have until April 23 to file written suggestions or objections with the Federal Trade Commission on the proposed trade practices rules for the Chemical Soil Conditioner Industry. (FTC will supply copies of the proposed rules on request.) Opportunity for oral discussions will be afforded at hearings due to start on the same date in Room 3004 of the U. S. Court House in Foley Square, New York City.

FTC includes—as soil conditioners—polyelectrolytes, lignin and cellulose derivatives whose primary function is to improve the physical characteristics of the soil.

•

The Army Chemical Corps and the Dept. of Agriculture will undertake a joint study of animal diseases at a $10-million lab on Plum Island (off Long Island), on land that is part of the Army's Fort Terry. Main facilities will be constructed during the next 18 months.

Agriculture is interested in studying such things as the hoof-and-mouth diseases; the Chemical Corps will look into diseases that "might be directly provoked through enemy action.

. . . The Editors

Quick-drying lacquer made with Hercules® nitrocellulose enhances the appearance and protects the surfaces of baseball bats, bowling alleys and pins, hockey sticks, golf clubs. Powder for shotgun shells, plasticizers for vinyl beach balls and floats, and many other Hercules products help "sell" sporting goods.

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Not only boat hulls, but automobile bodies, office partitions, and other large products can be fabricated from plastic laminates containing Hercules hydroperoxide catalysts, also used in synthetic rubber.

For 28 years, The U. S. Bureau of Mines has promoted accident prevention in mining and quarrying operations with The National Safety Competition. Hercules' magazine, The Explosives Engineer, provides Sentinels of Safety trophies for plants with best safety records. Gratifyingly, accident rates have been sharply reduced in mining and quarrying.

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What will Uscolite pipe carry?

Uscolite has excellent chemical resistance. It's especially recommended for carrying corrosive chemicals and materials sensitive to contamination. It's valuable for piping through highly humid and corrosive atmosphere. It works under the most severe conditions.

Is Uscolite a new product?

No. Uscolite pipe and fittings have been proved by years of service in thousands of installations in dozens of different industries.

Is Uscolite difficult to install?

On the contrary. It is available in both the standard and the extra-heavy wall iron pipe sizes. It is easy to cut and thread with standard equipment and install without special precautions. The pipe can be drilled, tapped, sawed and machined.

Is the Uscolite line complete?

Yes. It includes elbows, tees, flanges, couplings, reducing bushings, caps, valves—everything to make a complete pipe assembly.

How do I know if I can use Uscolite in my own business?

The odds say overwhelmingly that Uscolite pipe and fittings can save you money. Call on any of our 26 District Sales Offices, each staffed with engineers, to help solve any of your corrosion problems. Or see any of our selected distributors, or write to address below.

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BUSINESS & INDUSTRY . . .

Mobilized for Megatons

As the hydrogen bomb this week enshrouded the world in fear, the chemical industry reappraised its plans for surviving a hydrogen bomb attack. Dispersal of present plants seems unrealistic, and when it comes to disaster control, it's pretty much each plant for itself. Survival may well depend on just how ready each plant is made. Meantime new recommendations are awaited from the Dept. of Commerce's Business & Defense Services Administration on what chemical plants can do before and after an attack. And the U.S. Chamber of Commerce has called for a conference June 15 in Washington on industrial atomic defense.

Pulling up present chemical plants and moving them out of target areas is virtually impossible. Rebuilding with thick reinforcing walls or going underground likewise seems unrealistic. However, it is proposed that no new plants be built within the boundaries of any of the 70 critical targets —mostly heavily industrialized urban areas. And the government will grant fast tax write-offs in five years on 100% of the cost of bomb shelters built at plants.

Megaton Monster: The hydrogen bomb will completely obliterate larger areas than can the A-bomb. Greater areas will be burned, and instant action will be required for survival.

Civil Defense Administrator Val Peterson is urging plant managers to mobilize their own forces to cope with a hydrogen bomb attack since municipal police and fire departments are all likely to be engaged elsewhere. This means each plant will have to fight its own fires and explosions, care for its own casualties, keep its own communications nerve-center operating, coordinate its own efforts for survival.

Chemical Industry Alert: Many chemical and petroleum companies—conspicuously Koppers Co. and Standard Oil Co. of N.J.—have done outstanding jobs of organizing to cope with disaster. General Brehon Somervell's insistence on disaster planning paid off for Koppers recently when a fire at its Kobuta, Pa., plant was snuffed out in 20 minutes.

Chemical companies in Texas City, still mindful of the April '47 holocaust, have organized to meet the hydrogen bomb threat and other emergencies. In Worcester, Mass., struck by a tornado last year, the Norton Co. is also organized for any new disaster,

CDA'S PETERSON: Spurs plant mobilization for H-bomb survival.

as are the electrochemical industries of Niagara Falls and the petrochemical plants of Baton Rouge, Richmond, Calif., and the Philadelphia area. Thus the chemical industry, having barely sized up the A-bomb threat, must now revamp its plans to survive the H-bomb.

Friendship Deferred

After more than ten years in which one of their favorite divisions was calling each other by uncomplimentary names, two pugnacious rivals say that they're willing to shake hands—but only as part of a wholesale friendship ceremony at which many other pairs of enemies are also reconciled.

Tentatively in the mood to call off their long feud are the two leading labor unions in the chemical process industries: International Chemical Workers Union (AFL), and United Gas, Coke & Chemical Workers (CIO). But no definite date has been set for the brotherhood rites.

Both ICWU and Gas-Coke have decided that they're willing to sign the no-raiding pact that was supposed to go into effect this month among all AFL and CIO unions. This would be a good thing in a small way for the chemical industry; never a week goes by but what the two big chemical unions are scrapping over representation rights at one or more chemical plants, and this involves plantwide electioneering and politicking that frequently hurts morale and disrupts production.

AFL Unions Balk: The catch is that the proposed agreement—even though it has been ratified by the executive boards of both the AFL and CIO—doesn't take hold until it's approved by all (or nearly all) the affiliated unions. CIO Pres. Walter Reuther says that 98% of his organization now has agreed to be bound by the no-raiding pact, but that only 45 out of the 111 unions in the AFL are pledged to sign the treaty. Until the other AFL unions come around, he declares, the deal's off.

In the chemical field, Gas-Coke o.k.'d the no-raiding truce first, now is following the CIO line of waiting for greater unanimity of action before putting its signature on the dotted line. ICWU's long-time president, Herbert Bradley, has been unenthusiastic about the pact, but it was passed by the ICWU executive board during a meeting that Bradley missed because of illness.

One thing causing delay in putting the agreement into operation: raiding of AFL unions by other AFL unions. In approving the AFL-CIO agreement, ICWU leaders urged that a plan to eliminate such clashes "should be formulated at the earliest possible time." Another reason for the standstill: some AFL unions—notably the Teamsters and some construction trades unions—seem reluctant to forswear raiding. As of this week, the effective date for the no-raiding pact appears to be a long way off.

DULLES: Would stand on trade restrictions to Red China.

Embargo Imbroglio

Despite growing agitation in the Far East and in Europe for a general relaxation of trade bans on shipment of chemicals to Red China, it seems highly improbable that the U.S. will lift its embargo until the time when it can be "clearly established that Red China is not engaged in aggression in Indochina." That's the tenor of opinion in Washington this week; and that's the official position Secretary of State John Foster Dulles will probably take when the Geneva Conference opens April 26.

Opposition to the U.S. stand may be heated, however. German manufacturers are openly skeptical about the possibilities of big, short-range profits in trade with Eastern Europe, regard the Chinese mainland as "the greatest future market in the world."* Adding fuel to the fire: German chemical makers claim that British and Belgian producers have been taking advantage of the current low rate of German trade with Red China (not over $50 million last year) by "shipping embargoed goods to China through the intermediary of Communist Poland because the American-sponsored embargo list is less restrictive toward Poland than toward China."

In France, feeling is running less high. Some leading French manufacturers agree that so long as Communist China aids the enemy in Indochina, sharp limitations on exports should be maintained. Statistics on French export figures, however, stack up quite differently. In 1951, France shipped $1.9 million in goods to Red China; in 1952, the figure had inched up to $3.2 million; by last year, the total had soared to $12.3 million. And in the single month of Feb. '54, French exports to Red China amounted to $1.8 million—almost as much as the whole of 1951. It seems certain that as long as the French government is seeking U.S. aid in lining up support for a formal hands-off warning to Red China on Indochina intervention, embargo criticism won't crystallize. At the end of the Indochina war, though, it's a sure bet that relaxation demands will be immediate as France struggles to wriggle out of its chronic trade deficits.

Britain's view (as expressed by Sir Winston Churchill) is drifting ever closer to relaxation in embargo restrictions. Britain says it wants first to modify the definition of "strategic" (adopted by the Western Allies several years ago when the cold war was becoming hot). Sir Winston proposes "substantial" lifting of controls in three fields (two of which could ostensibly include chemicals): manufactured goods, raw materials, shipping. First "the embargo would be lifted on the Soviet Union and her satellites, later on Red China if the latter behaves itself at the forthcoming Geneva Conference."

Imperial rubber interests in Singapore are undoubtedly firing the British view (*see box*) abetted by a growing British public opinion that the vast Chinese market will be invaded by a growing competitor—Japan—if Britain doesn't seek to break loose of U.S. embargoes soon. (Britain increased its exports to Red China last year to £6.2 million—a gain of 37% over 1952. But exports of chemicals didn't add much to the total.)

Japan, meanwhile, is quietly going ahead with barter deals—involving reciprocal chemical deals—with Red China. Latest in a series of moves: the Japanese Ministry of International Trade & Industry has approved export of 5,000 tons of ammonium sulfate to Japan in return for 62,500 tons of China's industrial salt.

Actually shipment of ammonium sulfate to Red China has never been banned by COCOM—the international East-West Trade Control group in Paris. So Japan is acting fully within the letter of the law, is simply following the lead of Italy, which continued shipping fertilizer to China right through the Korean War.

What European countries apparently fear is that Japan, once in the Chinese market again, will get a firm foothold before other countries can get into the race. And in fertilizer exports that well may be the case. Toko Bussan Co. of Tokyo is currently dickering with China's Export and Import Corp. for an additional shipment of 3,000 tons of ammonium sulfate; other Japanese concerns are reported to be eyeing further moderation of Japanese embargoes.

The situation could easily degenerate to a joint attack on the U.S. economic embargo policies at Geneva. How Dulles will handle the situation is open to conjecture; but Eisenhower reportedly considers the question of "transcendent interest" to the U.S., has been reviewing the idea of a U.S. blockade of Red China if it openly intervenes in Indo-China.

Speaking for the natural rubber producing areas on the subject of trade with Red China is G. Salmond, chairman of the Singapore Chamber of Commerce Rubber Assn.:

"United States policy dominates the short term rubber scene in South East Asia today . . . is wreaking havoc on the economy of rubber-producing allies. On the one hand rubber trading with Communist China is forbidden; on the other it will be at least 14 months (when synthetic plants are turned over to private enterprise) before natural rubber producers feel they have a chance of free and fair competition in the U.S.

"The U.S. government is operating its monopoly unfairly against a friendly part of the world where dangers—both political and economic . . . are all too apparent."

* From *Handelsblatt*, a business periodical in the industrial Ruhr.

Not Knitting Now

Deeper expansion into the chemical field and a simultaneous withdrawal from the fabrics industry have helped win for Celanese Corp. of America a clean bill of health in a five-year set-to with the government's Dept. of Justice.

Recognizing that the development of various widely accepted synthetic fibers has broadened the competitive situation in the textile industry, and also that Celanese has pretty well dropped out of textile weaving and finishing operations in favor of much more extensive production of fibers and chemicals, the Antitrust Division concluded its 1949 civil suit against Celanese with a settlement that Celanese Pres. Harold Blancke hails as "a complete victory" for the company.

Under the Truman Administration, the government had filed this suit following the 1946 merger of Celanese and Tubize Rayon Corp. The charge was that Celanese was "unreasonably restraining trade in manufacture and sale of rayon warp knit fabrics by acquisition of its principal competitor in the field."

But Celanese already was moving to get bigger in chemicals and smaller in cloth-making. It had begun selling both weaving and knitting machines prior to 1949, and in mid-1953 the company announced its retirement from the commercial weaving industry, with the permanent closing of its plant at Staunton, Va. At about the same time, Celanese sold the dyeing and finishing machinery of its Amcelle plant near Cumberland, Md.

WIDE WORLD

CELANESE'S BLANCKE: Machinery already sold will simply stay sold.

This made it easy for company and government to agree on wording of a consent judgment requiring the sale of the Tubize machinery (which already had been sold) and forbidding Celanese to repurchase those machines.

"Since the filing of this complaint," Antitrust chief Stanley Barnes remarked, "there have been drastic changes within the rayon warp knit goods industry. Among other things, various synthetic fabrics have emerged and warp knitting has diminished in relative importance."

While Celanese still has a warp knitting plant in Bridgewater, Va., it has been operating this plant for some time only as an industrial laboratory for representatives of leading warp-knitting firms. Thus, says Blancke, "fabric development and technological advances have been turned over to the rayon warp-knit industry." Far from trying to monopolize that industry, Celanese has been assisting warp-knit companies, Blancke continues. One example of that helpful spirit: Moving some of the textile division's service departments from New York to Charlotte, N.C., to provide increased aid to textile mill customers in the South. Noting the new situation, the government proposed a decree that "merely directs us to do what it well knew we had already done."

Meanwhile, the company's chemical expansion has been proceeding at a rush rate. Of the $18 million spent by Celanese in 1952 on additional facilities, much the largest part of that outlay went to the company's chemical division. In 1953, Celanese began shipment of butanol from its Bishop (Tex.) plant and vinyl acetate from its Pampa (Tex.) plant; bought Marco Chemicals of Linden, N.J., and began expanding the line of Marco-brand polyester resins; started its campaign to sell in the U.S. up to 15 million lbs./year of pentaerythritol produced by its Canadian subsidiary at Edmonton, Alta.; and began production of polyester resins through another subsidiary in Mexico City. Chemical division sales climbed 150% in four years; plastics sales shot up by 50%.

So it seems that in the industrial community as well as in the courts—as a Federal Trade Commission examiner declared last year in dismissing a 1943 complaint against this company—fast-growing Celanese is not to be judged on records "of past decades."

WIDE WORLD

CHAIRMAN O'NEAL: Says Monsanto will double Dunlop's ante.

Picking Up Momentum

News broke fast in Great Britain last week, following Imperial Chemical Industries Ltd.'s decision to drop the flag on plans to build a 11,000-ton/year* synthetic rubber plant at Wilton, North Yorkshire. First to follow ICI's lead: Dunlop Rubber Co., Ltd.—which will drive into the rubber business at a rate of 2,200 tons/year as a starter. Next off: Monsanto Chemicals, Ltd.—which has plans to start immediately on 4,400-ton synthetic rubber program.

Compared with the German, U.S., Canadian synthetic rubber production scale, Britain's plunge into synthetic rubber production may seem small. Its significance, however, can mushroom into a move of major importance because of its potential effect on the sale of natural rubber in sterling areas—where Britain has a prime stake in the economy. Tonnages now planned are small, but as demand develops, it's a good bet that heavy expansion in synthetic rubber producing facilities will develop.

Units now slated for construction (amounting to 17,600 tons total) won't be in production before late 1956 or 1957. Monsanto and Dunlop each plan to spend $1.4 million; ICI's expansion will probably cost close to $2.8 million. In general, current thinking seems to involve the use of domestic raw materials—butadiene, styrene, acrylonitrile—almost exclusively.

In the case of ICI (which makes butadiene, and is spending $14.8 mil-

* All tonnages expressed in U.S. short tons, 2,000 lbs.

lion to increase its capacity at Wilton) and Monsanto (whose subsidiary, Forth Chemicals, Ltd., turns out styrene monomer), the plan seems feasible. But no one in Britain today makes acrylonitrile in sufficient volume to be a major factor in synthetic rubber production, although there are rumblings that ICI's future expansion plans include such a plant. Conclusion? For the nonce (at least) there will be quantities of acrylonitrile shipped into Great Britain. Dunlop should be the major purchaser.

One Other Possibility: Although U.K. antimonopoly laws prohibit a company's selling raw materials to one firm while refusing to sell to another, there's speculation that Monsanto and ICI may agree to a styrene-butadiene trade-off, leaving Dunlop dependent on the vagaries of import permits. Goodyear Tyre and Rubber Co., Ltd. and Firestone Tyre & Rubber Co., Ltd. are both big enough and interested enough to step into the picture at any moment, officially say they're looking the situation over.

British government reaction to the rapid turn of events is noncommital, plays down the possibility of a "large synthetic rubber industry in the British Isles in the near future." ICI interests are "to cheapen production costs, widen the uses of natural rubber."

From the company's side, there's very little talk about competition with natural rubber outlets. Both ICI and Monsanto carefully suggest their production will go into shoe soles, emulsion paints, etc.—which do not threaten, directly at least, to replace natural rubber. Only Dunlop says it will channel part of its production into tires and tubes. Reason for the reticence: expansive talk about a booming synthetic rubber industry in Great Britain could (and probably would) turn into a political bombshell.

EXPANSION. . . .

Anhydrous Ammonia: The Alabama By-Products Corp., Birmingham, Ala., and the Hercules Powder Co., Wilmington, are working out plans to build jointly an anhydrous ammonia plant at Birmingham, Ala. Capacity: 45,000 tons/year. Construction is expected to be started within a few weeks; completion's scheduled for 1955. The new plant will be the first commercial producer of ammonia east of the Mississippi, and south of Virginia.

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Soda Ash: Dow Chemical will build a $3-million soda ash plant at Freeport, Tex., designed to produce 300 tons/day of soda ash. Engineering plans are currently under way; construction will be started shortly.

That brings Dow's capital expenditures for the fiscal year ending June 30, '54, to between $70-80 million. Also under construction: a glycerine plant (with operation promised by Jan., '56), and a polyethylene plant (due in next summer). Combined construction cost: $18-20 million.

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Carbon Dioxide: Lion Oil Co. will build a $550,000 carbon dioxide plant at its Barton plant site, Luling, La. Output: 42 tons/day of carbon dioxide—part in the solid dry-ice form, part as liquid carbon dioxide.

COMPANIES. . . .

Another recent company incorporation:

• Cherry Chemical Co., Inc., Cherryville, N.C., has been formed to deal in insecticides. Authorized capital: $25,000.

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Foote Mineral Co. will redeem its outstanding convertible debenture as of 1967 on May 5 at 102 ¾. Reason: the company wishes to simplify its financial structure, seeks to provide credit flexibility. Following the redemption, Foote will have outstanding only $2 million in a term loan.

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More 1953 year-end earnings statements:

• Abbott Laboratories' sales up 3.1%, net profits up 4.2%, to $9.2 million.

• Interchemical Corp.'s sales up 3.0%, net profits up 19.5%, to $2.7 million.

• Olin Industries, Inc.'s sales up 21.3%, net profits up 23.2%, to $13.1 million.

• Pennsalt's sales up 3% (to an all-time high of $57.4 million), but net profits lagged 3.4%, down to $3.1 million.

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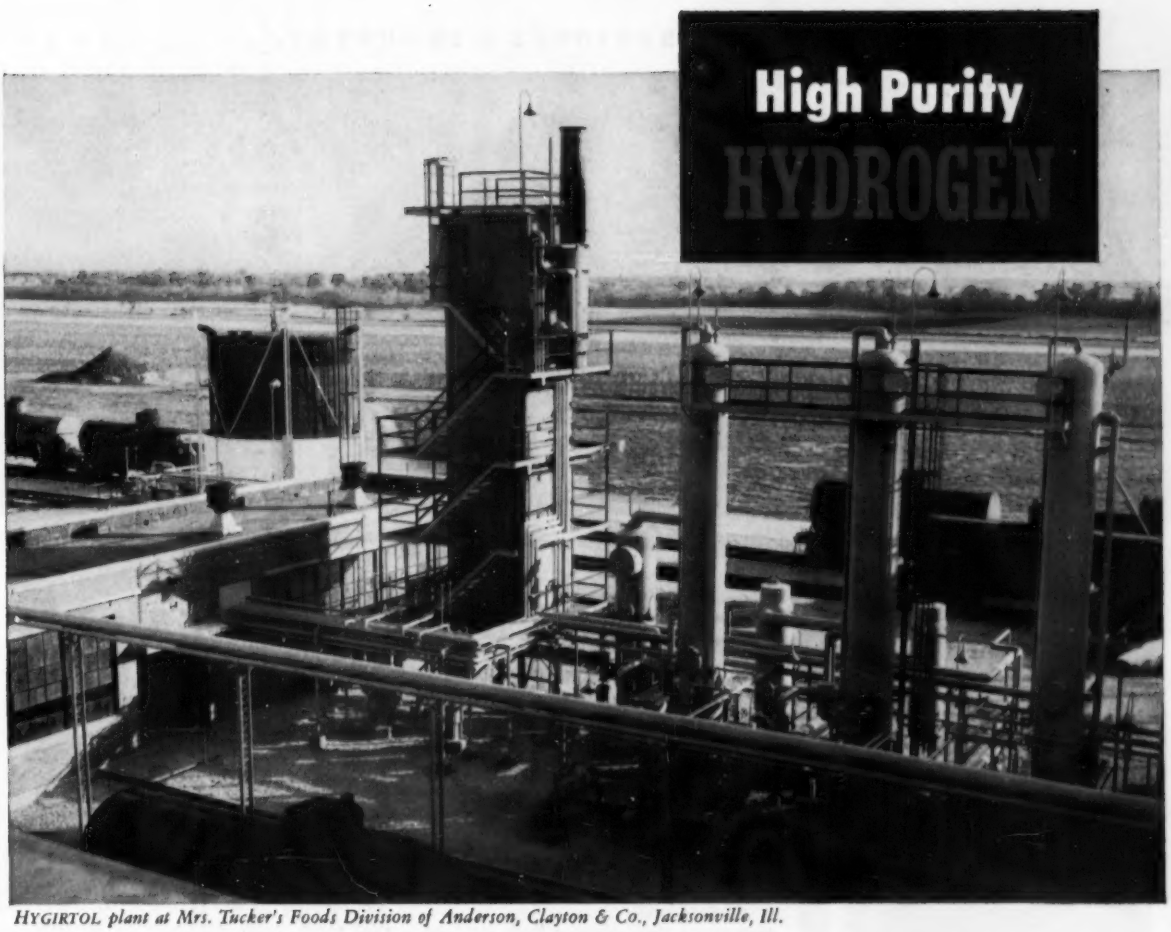
Dow Chemical Co., Midland, Mich., has acquired 85% of the stock in the Columbia Oil Shale & Refining Co. for an estimated $1.5 million, to insure adequate sources of raw materials. No immediate development of the 7,600 acres of oil shale land is contemplated.

Chile Cheers

CONSTRUCTION WORK is humming in Santiago, Chile (*see cut*), on the Instituto Bacteriologico's new penicillin plant. Production's now expected in 6-8 months' time; capacity's listed at 250 billion units/month. Aiding in the financing: the U.N. Technical Assistance Administration (TAA), U.N. Children's Fund, and World Health Organization (WHO). Full operation will solve a major economic problem for the Chilean government: costly importing of hundreds of billions of units of penicillin yearly from the U.S., other South American countries, Europe.



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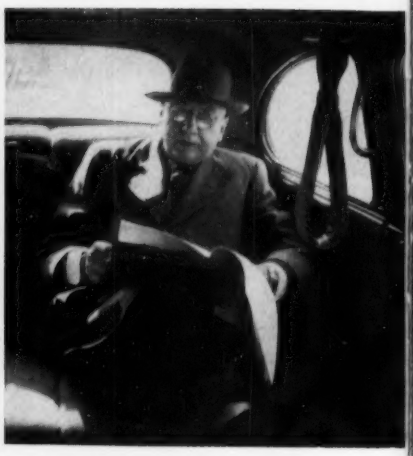

OFF EARLY: Geiger, typical of chemical presidents, gets much of his reading accomplished in transit.

Today's Chemical President

In any industry, during periods of rapid growth, top management is likely to overemphasize company affairs, neglect outside activities. Immediate business problems are of prime importance; executives spend the large proportion of their time dealing with questions specifically concerned with the production and sales of its products.

But when the industry finds its footing, grows up to become an integral part of the nation's economy, the job of a corporate president changes. That's what has been happening in the chemical industry; that's why today's chemical president is finding his way more and more into civic, industrial and government circles. Responsibility has begot importance; and importance has begot widened responsibility.

Typifying the new three-dimensional attitude of responsibility—to company, community and industry—is Marlin G. Geiger, president, Davidson Chemical Corp., Baltimore, Long experienced as a production and general-management leader in the chemical industry, Geiger joined Davison as executive vice-president Jan. 1, '47, was elected to the board of directors that same year. By Oct. '51 he was elected vice-chairman of the board, had assumed executive responsibility for all company activities in research and development, chemical operations and engineering (including design, engineering and construction phases of the company's $26-million expansion program).

On Nov. 30, '53, he became president of the firm.

QUICK VISITS: Hospital executives . . .

. . . employees appreciate interest.

WEEKLY CONFABS: Davison vice-presidents called together . . .

PLANT TRIPS: At Curtis Bay . . . talks with plant manager, labor relations committee.

A 3-D Man

His role as president, Geiger feels, is one of integrating community, industrial, professional interests with those of the company "into one scheme for business and living." From such an amalgamation, everyone benefits.

The benefits to the business man are multifold. Civic activities (an industrial directorship of South Baltimore General Hospital, Maryland Society of the Blind, and Fidelity Trust Co.; membership in Newcomen Society, Rotary Club, Maryland Club, Mason and Shriners are on his current list of activities) "broaden a man's viewpoint, promote tolerance, highlight the reasoning processes of others." Active participation in community projects "promotes a stability of thinking projects through . . . instead of tackling them as projects of political expediency."

Participation in industrial technical societies gives him an opportunity to meet people concerned with problems very like his own, offers a ready-made means to keep up with developments "that may in any number of ways heighten his value to his company . . . and to himself." Active participation is important; Geiger urges young employees especially "to be far more than dues-paying members of the society of their profession." Included in his own roster of industry alliances: directorship of the National Fertilizer Assn., and membership in Southern States Industrial Council; American Chemical Society; American Institute of Chemical Engineers; the American Assn. for the Advancement of Science.

Two-Way Street: From the community's point of view, there's great benefit to be gained from the active cooperation of industrial leaders. Financial aid for local charities (perhaps otherwise unavailable) is more easily obtained; there's a wealth of experience in business affairs to be garnered from men whose corporate duties involve the very problems (magnified immensely) of balancing the monthly budget, projecting plans for the future. More than one school for handicapped children has been launched as the dream of civic-minded industrialists; more than one grateful hospital owes its industrial accident room to vision of industrialists who espied the chance to "give a little in time and thought."

From the company's angle there are equally important advantages to be gained from employee (and particularly presidential) participation in outside activities. Many a contact, otherwise unavailable, has been made over an industry-participation discussion roundtable; many a corporate

. . . discuss ways and means.

LUNCHEONS: Part of the job . . . community-organized boards of directors.

STAFF MEETINGS: In rapid succession, a research-development rundown, a directors' meeting.

PUBLIC BOWS: Both on regional hookups . . . and at a personal level.

business deal has been conceived at a Rotary Club get-together. And as Geiger points out: "The stimulus of other minds is one sure way of keeping the ruts out of your own . . . very often leads to ideas that can be applied in your own business."

It's not the discussion of your own specific problems and activities in outside groups that benefits the company most, he avers. Rather, the main benefits come from the eye-opening of its employees to wider horizons, encouraging greater thought, and from solid spirit of community-company cooperation, engendered by active participation in civic projects.

Says Geiger: "The problem today's chemical company faces in selling itself to the community is essentially the same everywhere. Business people, community leaders, opinion-molders must be convinced that the company is genuinely interested in community affairs, isn't there just to make a dollar, but intends to be a useful citizen in good standing. Friends made for the company in such manner can help solve many a problem. Apart from making the town a better place to live in, it sets the stage for mutual understanding . . . if trouble does arise."

The chemical industry has been notably laggard in recent years in outlining its needs and desires to the public at large. Pollution problems, housing tangles, union upsets in many cases might well have been forestalled had company executives been at a closer communication level with their neighbors. "It takes time away from day-by-day company duties; but you're paid back a thousand times . . . in a thousand ways."

To some extent, Geiger admits, his present memberships and activities in various organizations are calculated as a means of preparing younger men in the company to take over the reins of management "once the older generation decides to step down." There's no better way of whipping up interest in participating in outside affairs than by steeping yourself in them. Once indoctrinated with the idea, lower management falls into line easily.

Following through, Geiger urges employee participation in outside activity whenever he has the opportunity, maintains some memberships "solely for the purpose of seeing that the company is represented in the group, and that Davison men are not just passive or golf-playing members but ones who take part in group administration, other business activities."

In this connection, William McCloskey (today a vice-president, then comptroller) remembers his experience with Geiger when the subject of a proposed presidency of the National Assn. of Cost Accountants came

A high purity *coagulant* manufactured especially for makers of latex products...

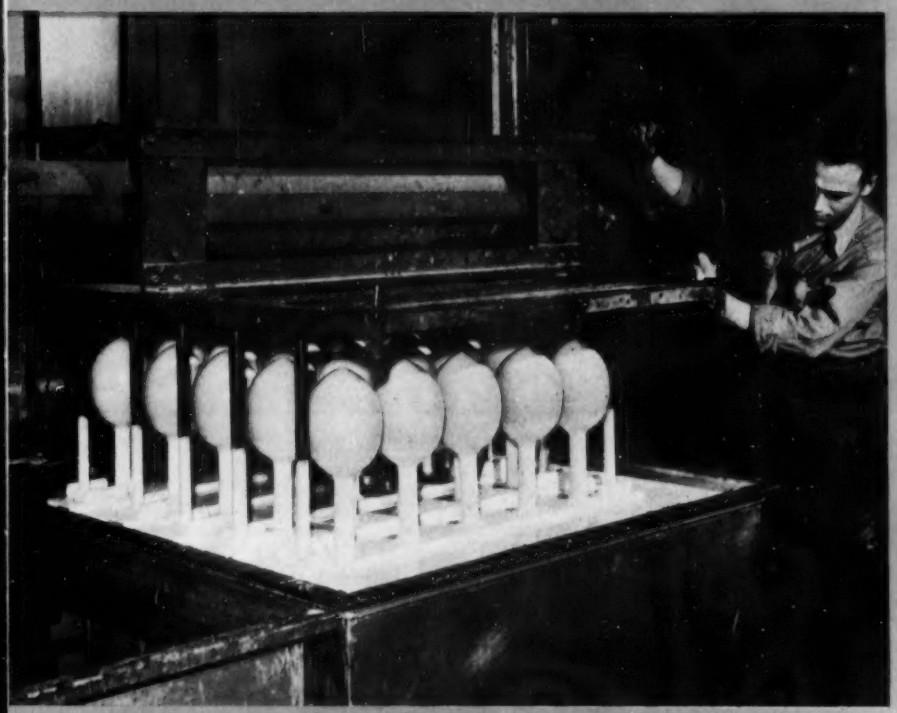

Photo Courtesy American Anode, Inc., Akron, Ohio

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The dependable uniformity and high quality of Baker Calcium Nitrate give it ever-widening acceptance in the rubber industry.

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Baker CHEMICAL

Baker Industrial Chemicals

"Purity by the ton"

SPOT DISCUSSIONS: First at the School of the Chimes, then en route to New York

up for discussion. Time was the essence of the problem. McCloskey realized the job (if well handled) would involve considerable travelling to chapter meetings, attendance at all association functions. Geiger's reply was instantaneous and typical: Davison would not want McCloskey (or any other qualified executive) to consider the job unless he was willing to give it everything he had. And once he decided to take the job, whatever time it would take would receive the company's full blessing.

Corporate business, obviously, can't be promiscuously thrust aside by a rush of industry-community spirit. But the importance of management's real interest in some phase of outside activity can't be denied. "The ideal," points out the president of one of Davison's large competitors, "would be if we could make an arbitrary split-up of time between company, civic, and industry responsibilities." But that's never possible. Some men seem to thrive on a heavy diet of all three; others can't ever seem to get really enthusiastic about anything outside the office. "Chemical companies, by and large, though, are coming to realize that in their top executives they need men able to work out a happy combination of interests in company business, civic problems, industry affairs. Like isolationism, the concept of a chemical president as a man dedicated solely to company management is a sadly outworn view."

Geiger's interpretation of his job as president has both forerunners and followers. Men who lead today's foremost companies have spent years developing the idea (educating stockholders, older employees alike in the concept's value. Results won't show up immediately, may never be judged in dollars and cents. But the idea's a trend to watch. Today's three-dimensional president will be prototype of chemical president of tomorrow.

INDUSTRY AFFAIRS: Contacts can be important, ring down the curtain on a busy day.

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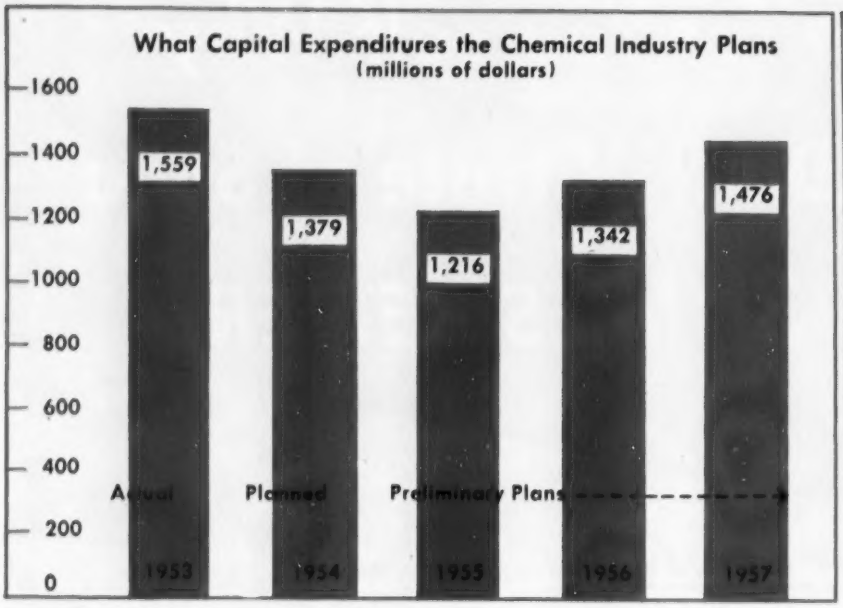
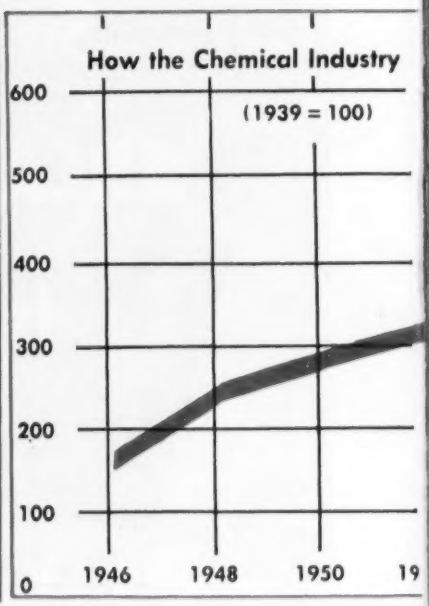
A Better America Through Chemical Progress • CHEMICAL PROGRESS WEEK • May 17 to 22, 1954





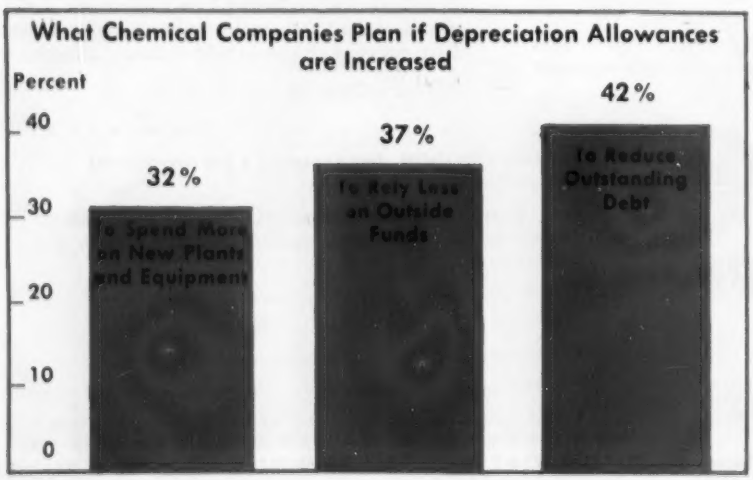
Geared to the Long Term

Capital spending in the chemical industry will be off this year, but over the long run (1955-57) it will be scaled in line with an expected rise in sales. Capacity will continue to rise; chemical companies will seek to reduce outstanding debt if depreciation allowances are increased.

That's the nub of the industry's plans and expectations, based on replies to the seventh annual McGraw-Hill Survey of Business. Perhaps the best evidence that chemical companies see no major depression in sight: the average chemical company predicts its own sales will rise 30% from 1953 to 1957, estimates the industry's sales as a whole will be up 19%. (Each, obviously, expects to do better than the other fellow!)

Compared with the 4% spending decline in industry as a whole (including manufacturing, mining, electric and gas utilities, railroads and other transportation, and communication) the chemical segment's 11.5% drop in capital expenditures this year might seem alarming. But it's a time-proved fact that manufacturers can change their minds quickly (note the switch in plans upward since last fall). Consumer spending, abetted by the recent cut in excise taxes, could provide the spur. Petroleum, food machinery, electrical machinery and automobile companies all plan to spend more this year than last; their additional requirements could cause chemical producers to speed up construction programs.

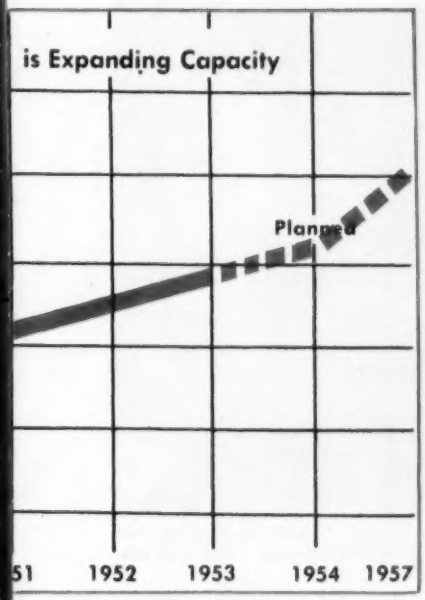
Over the longer haul, chemical companies' plans underscore the belief that the present spending lull is simply a period of assimilation. Company thinking would indicate that chemical firms will lay out more for new plants and equipment in 1957 than they will this year. Adding to the confident outlook: actual expenditures in 1957 will probably be substantially higher than the current estimates, if plans are revised as they have been in the past.

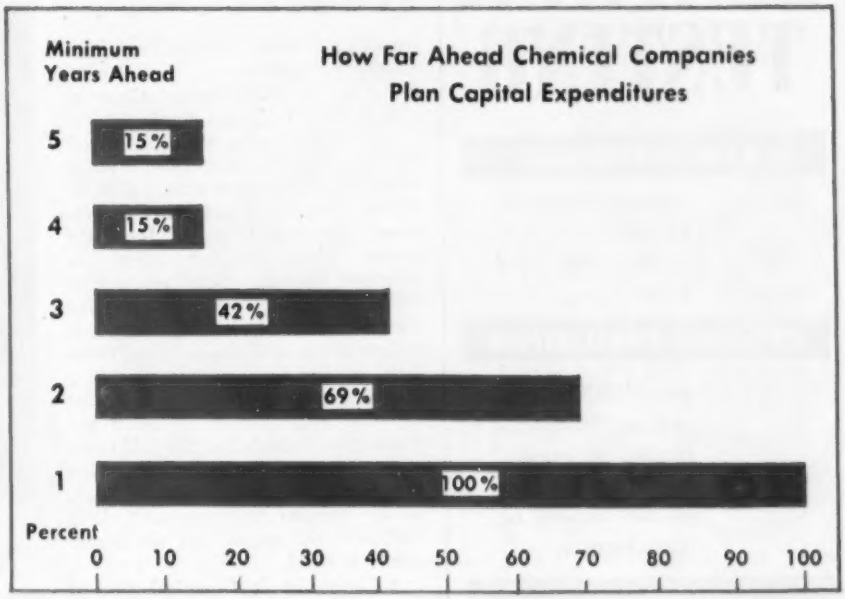


Ever-Growing Capacity: It's significant too that chemical companies are showing their heels to the rest of industry in the race to expand capacity. Manufacturing industry plans to increase its productive capacity by only 4% in 1954, another 9% by the end of 1957. But the chemical industry, continuing its long-term growth pattern, expects that its own capacity will jump 7% this year, will soar an additional 22% by 1957.

Major reason behind these continued plans for heavy investment in expansion of capacity: chemical men are looking beyond the temporary lag in sales (first quarter, 1954), foresee even higher sales for the year 1954 than were recorded in 1953 (*CW, April 3*).

Steeped in Faith: Linked to the be-





lief that capacity in the chemical industry is due to spiral upward is the confidence each firm has in its ability to increase its share of the market: Its own sales will increase one and one-half times faster than will the rest of the chemical industry's sales by 1957, says the survey. The means: increased emphasis on selling.

That heavier competition is in the offing is implicit in the division of capital spending plans between expansion and modernization. Last year the chemical industry spent 70% of its available funds on new equipment, 30% on modernization; this year's split will be 66% against 34%. Why: replacement and modernization means cost-cutting, an essential for companies determined to prosper in the foreshadowed competitive period ahead.

Further: cutting costs will mean a substantial savings in labor costs in the chemical industry over the next four years. The average company polled (while expecting sales to jump 30%) sees its labor force expanding only 16%.

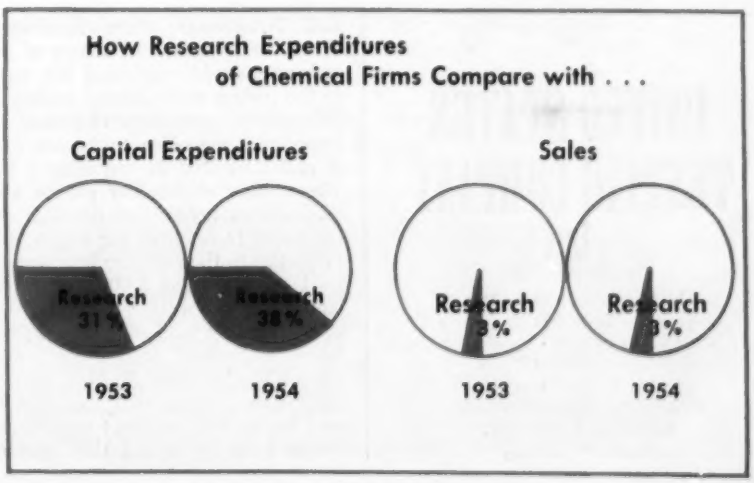
Possible Flexibility: Compared with industry in general, the chemical industry says it has the greatest leeway to cut capital spending in 1954-1957 if sales fall. Maximum annual spending: $1,784 million; minimum spending: $758 million. But it's heartening to note that even under the worst of conditions, capital expenditures aren't due to drop more than 50% below the annual level currently planned for 1955-57 ($1,345 million).

If depreciation allowances are substantially increased, the chemical industry won't spend as much of the available funds for new plants and equipment as will manufacturing firms in general. Reason: the industry as a whole has substantial capital spending plans already in the works, will use the funds instead to reduce outstanding debt.

Growth Indicator? It's an established fact that research developments are an important factor in any competitive period. Therefore, that chemical companies plan to spend at least one-third as much for research as for plants and equipment this year (and 3% in relation to sales) is expected. But it may be significant that along with the electrical machinery makers the chemical industry is *both* planning to spend the most for research (in relation to capital expenditures and sales) and predicting the greatest sales growth between 1953 and 1957.

Accuracy in predicting capacity is another reassuring augury of what's ahead. The chemical industry (together with electrical machinery and food) last year predicted its growth exactly, is now planning record increases in capacity in 1954 and again in 1955-57.

Such planning points up that business activity (at least in the chemical industry) may be turning upward again. The upsurge may not come in the immediate months ahead, but chemical men seem assured that by 1955-1957, the expansion boom will again be in full sway.



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LEGAL. . . . . .

Royalties, Contract, Taxes: Three lawsuits of chemical interest were moving along in the U.S. District Court at Wilmington, Del., last week:

• In a controversy over licensing of a water-treatment patent, Chief Judge Paul Leahy authorized release of $70,368.85 in royalty payments to National Aluminate Corp., holder of the patent. Those payments were for quarterly periods extending back to 1949 under a licensing agreement with Hall Laboratories, Buromin Co., Calgon Corp., and Hagan Corp. These four concerns—which are under a single management—had asked that the licensing contract be ruled not binding on grounds that the acid treatment process was already known before the patent was issued in 1948. Leahy rejected this argument, held that both the patent and the agreement are valid.

• Onyx Oil & Chemical Co. of Jersey City, N.J., was ordered to pay the Laurence C. Smith Co. of Syracuse, N.Y., $28,758.79 as damages for alleged breach of a contract on sales of "Revitex," a sizing compound developed by Onyx for use in dry cleaning. Evidence showed that Onyx gave Smith a contract for exclusive distribution of this product in 1949, then repudiated the contract when certain other parties advanced royalty claims.

• Complaining that the U.S. Internal Revenue Service collected from Atlas Powder Co. $2,475 more than its tax bill should have been, the company has filed suit for return of that amount from the federal treasury. Internal Revenue collected the tax on bank loans made to Atlas, contending that the loans were taxable debentures; Atlas insists that the loans were in the form of nontaxable promissory notes.

•

Still Hankering: When Remington Rand (as owner of 13 shares of Interhandel stock) intervened last week in the lawsuit over General Aniline & Film Corp. ownership, observers inferred that the office equipment firm is still interested in acquiring GAF. Three other stockholder groups also filed claims before the deadline set by Judge David Pine for registration of parties to the suit; the four groups hold an estimated 55,000 of Interhandel's approximately 150,000 shares of outstanding stock. It was reported from Switzerland that many Interhandel stockholders decided not to register, expecting that the dispute may be settled by direct negotiation between the Swiss and U.S. governments. The U.S. Dept. of Justice, which seized control of GAF early in World War II, asserts that Interhandel—owner of GAF—was in reality a Swiss front for "enemy aliens."

JUDGE NOONAN: Holds that fat folk can distinguish between wafer and pill.

•

Customers Not Confused: The Sharp & Dohme division of Merck & Co. has been exonerated in the trademark infringement lawsuit filed last summer by Model-Etts Corp., and another legal precedent has been established for makers of chemical specialty products. This case, tried before Federal Judge Gregory Noonan in New York, was dismissed, with Merck winning judgment for $153.50 in court costs. The Model-Etts claim—that its trademark was being infringed by the brand name "Melozets" on Sharp & Dohme's anti-appetite preparation—was thrown out, and the court deemed insufficient the evidence put forward by Model-Etts in support of the charge that customers were confused because of the similarity in names. The court noted that Model-Etts are sold in tablet form in glass jars in health stores, while Melozets are sold in cracker form in cardboard boxes, primarily in drug stores and hospitals.

•

Reluctant Resident: Chemical companies that build their plants just outside of the city limits can expect to be the targets of envelopment efforts, even if the adjacent community is only a village when the plant is built.

When the Shell Chemical plant was built near Deer Park, Tex., that village was a town of less than 2,000 population and was not allowed to expand its

WHY THE DOUBLE CHECK?

SHARPLES TRADE MARK CHEMICALS

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When the Sharples trademark was adopted over a quarter of a century ago the double check was made part of it to signify a pioneer idea—a double check on product quality; first when produced, and subsequently when shipped. Today our exacting quality control program double checks a chemical at many points in our plant—even after it is actually in containers ready to be shipped.

Thus the DOUBLE CHECK in our trademark is more than just a distinctive design—it is YOUR assurance that everything YOU receive from Sharples has been DOUBLE CHECKED before leaving our plant!

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Do you have our new Catalog 54-1, "Sharples Organic Chemicals—Physical Properties"?

CHEMICAL PROGRESS WEEK-MAY 17-22

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area beyond 2 sq. miles. In 1952, Deer Park passed an ordinance to annex a half-mile strip that included most of the Shell plant, thus adding a considerable amount to the town's total valuation of taxable property.

Shell fought this move in the courts and won the first two rounds, but last week in Austin, the state supreme court reversed the lower courts' rulings and upheld the annexation. Said the court: Deer Park was legally incorporated as a city in 1948, and so gained all of the necessary powers of annexation.

•

Chemical Damages: In two recent civil suits, the courts awarded a total of nearly $30,000 for chemical damages to plants.

- At Norristown, Pa., a jury held that the American Chemical Paint Co. should pay a total of $11,115 to 31 people who live near the Ambler, Pa., plant where the company manufactures a weed killer and other chemical specialties. The plaintiffs charged that fumes from the plant caused coughing spells and killed much vegetation.
- At Camden, N.J., another jury awarded the Garden State Nurseries Co., Erlton, N.J., $18,000 for the loss of 100,000 plants said to have been made unsalable by an insecticide purchased from the Lewis W. Barton Co., Haddonfield, N.J.

Rumanian Rumors

Rumania's synthetic medicine production last year jumped to more than 10 times output in 1948, according to industry spokesmen. Standardization of pharmaceutical products has been completed; new plants turning out insulin, orthopedic medicines, alkaloid extracts have been built.

A new system of distribution has been developed. Today in Rumania, nearly 4,000 pharmaceutical centers are located at cooperatives scattered throughout the country—some in industrial centers, some at the work site. An example: strictly aimed at raising morale in the mines, 14 pharmacies last year were set up in mining towns.

Next on tap for development: sulfathiazole, antipyrine, barbiturate, antisyphilitic, penicillin units. Other medicines also slated for production are vitamin B, progesterone, testosterone, etc.

In the stage of clinical development: hemostatics (polygonum), sedatives (such as mycarin), concentrated liver extracts, luminal, etc. In the laboratory stage: several products designed to alleviate high blood pressure, hemorrhage, cancer (sic) – as well as analgesics, strong antibiotics.

Regrouping for '55

Next week in New York City, the Committee on Engineering Laws—whose membership includes more than a dozen firms that design and/or build chemical plants—will meet to select new officers and chart a plan of action for the legislative year of 1955.

This committee's aim is to assure the legality of practice of engineering by corporations in all the 48 states; this year, it succeeded in Mississippi, again lost out in New York. Three other states—Ohio, Rhode Island, Washington—also prohibit corporate engineering practice, but the key to the whole campaign is the pitched battle in New York, expected to be resumed at next winter's session of the legislature. The Carlino-Milmoe bill, endorsed by the committee, was killed by adjournment of the 1954 legislature.

Meanwhile, many of the committee's members will continue to carry on their engineering work in New York, in technical violation of the state's present law. These firms feel that the law is unconstitutional, but are seeking enactment of a new law rather than a court test of the present statute.

Opposing the committee's new effort to have the law changed is the New York State Society of Professional Engineers.

Chrome Combine Push

Three British producers have teamed up to exploit the growing Canadian market for chrome chemicals. Already amalgamated as British Chrome & Chemicals Ltd., with headquarters at Eaglescliffe, England, the firms have now organized a new subsidiary, British Chrome & Chemicals (Canada) Ltd., located in Toronto.

The three companies comprising the parent British organization are John & James White Ltd., Glasgow; the Eaglescliffe Chemical Co. Ltd.; and E. P. Potter & Co. Ltd., Lancashire.

Behind the Canadian venture is the growth of Canada's industries that use such chrome chemicals as chromic acid, sodium bichromate, potassium bichromate, chrome sulfate and chromium oxide, of which the three British firms have long been manufacturers. The automobile and aircraft industries have absorbed increasing tonnages in recent years for hard and bright chrome plating of metal parts. Chrome chemicals are also playing an important part in the production of jet engines.

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As miners of copper, iron, zinc and sulphur and basic producers of chemicals, the Tennessee Corporation presents

INDUSTRIAL CRYSTALS COPPER SULPHATE

With the increased use of Copper Sulphate in industrial applications the Tennessee Corporation has developed a new improved form of Copper Sulphate Crystals designated as Industrial Crystals Copper Sulphate. Being uniform in structure and free flowing, this new improved Industrial Crystals Copper Sulphate is readily adaptable to all types of solution equipment.

In addition to the Industrial Crystals Copper Sulphate regular Copper Sulphate Crystals are offered.

Samples, specifications and detailed information available upon request.

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DELAWARE'S YOUNG: On any move to turn the faucet, he asks to be heard.

Rationing a Treasure

All of the chemical process plants along the lower reaches of the Delaware River in New Jersey, Pennsylvania and Delaware—also those in New York City—have a stake in the outcome of a lawsuit now pending before the U.S. Supreme Court, and which appears to be heading into its final stages this week.

This is the suit over New York City's petition to increase its intake of water from the Delaware River from 440 million to 800 million gal./day; New Jersey and Pennsylvania are the defendants. In the latest development, Delaware—as an intervenor in the case—sent its attorney general, H. Albert Young, to a special hearing in Philadelphia to put his state's position on record before a special master appointed by the high court.

Delaware doesn't begrudge the New Yorkers their drinking water, it seems; but it does want to be heard from if there's any thought of turning the faucet to change the amount of water now flowing past Wilmington into Delaware Bay.

Chemical Viewpoint: Chemical companies' interest in the contest was outlined by Executive Vice-Pres. Gerrish Gassaway of the Delaware State Chamber of Commerce and by Ward Myers of Du Pont.

Eleven chemical and other industrial plants in the Wilmington area, says Gassaway, now are using a total of more than 430 million gal./day of water from the Delaware. Those companies have found that when the river's flow is light, salt water from the Atlantic Ocean pushes up the bay

ATLAS chemical digest

FOOD INDUSTRY DIVISION
CHEMICALS DEPARTMENT

ATLAS POWDER COMPANY
WILMINGTON 99, DELAWARE

ATLAS EXPANDS EMULSIFIER PRODUCTION... FORMS NEW FOOD INDUSTRY DIVISION

Atlas Powder Company's interest in the utilization of farm products for the production of chemicals is being further extended by the construction of two additional esterification plants. Located at Memphis, Tennessee, and Brantford, Ontario, these plants will manufacture mono- and diglycerides and other emulsifiers. Supplementing the production of the Wilmington plant, they will enable Atlas to produce emulsifiers at three widely separate locations, affording increased flexibility in source of supply and freight savings to users.

PLANT CONSTRUCTION STARTED

The plant at Memphis, larger of the two new plants, is scheduled for completion by late 1954. It will be located adjacent to the Trendex plant of the HumKo Company, one of the country's leading producers of fats and oils. This new plant will thus be able to take advantage of a close source of raw materials and the latest technological improvements.

The second plant, at Brantford, Ontario, is being erected by Atlas Powder Company, Canada, Ltd., and will be in operation in about six months. Preliminary planning envisions a second unit for the production of ethylene oxide derivatives.

Both plants will produce emulsifiers which the food industry uses in such products as shortening, margarine, candy, ice cream, bread and baked goods, to improve eating quality, appetizing nature and attractiveness. These emulsifiers help to distribute oil-soluble ingredients homogeneously throughout the food products in very fine particles. They also find use in cosmetics, pharmaceuticals, surface coatings, textiles, cleaning compounds, petroleum production and refining.

FOOD INDUSTRY DIVISION TO HANDLE SPECIALIZED PROCESSING APPLICATIONS

Establishment of a new Food Industry Division, specifically to serve the food processing industries, reflects Atlas's recognition (1) of the growing importance of chemistry in improving the nation's food and (2) of the need for a separate division within the Chemicals Department to meet the specialized requirements of food processors.

The Food Industry Division will be responsible for the development of policies with respect to the marketing of food adjuncts or ingredients for the food industry. In addition, Atlas has organized a distinct group at its Central Research Laboratories having quarters in which specialized equipment has been installed for research work on food products.

NEW CAPACITY REQUIRED TO MEET INCREASED DEMAND

When the present standard of identity for bread was issued under the Federal Food and Drug law, Atlas's polyoxyethylene stearate emulsifier (Myrj® 45) was not included as an optional ingredient. Atlas therefore discontinued the sale of that emulsifier for major food uses, although it still is carrying on the scientific studies looking toward the future establishment of the suitability of this emulsifier for major food uses. Atlas continues to supply the demands of the food industry for certain of its Span® and Tween® emulsifiers.

Since mono- and diglycerides were officially approved as bread ingredients, Atlas began the manufacture of these types of emulsifiers in its Atlas Point, Del., plant. Because of increasing demand by the food industry for Atmul® and Atmos® mono- and diglycerides, it was decided to expand production facilities through the erection of the new plants at Memphis and Brantford. Atmul emulsifiers are used chiefly by the bakery, shortening and margarine industries, while Atmos emulsifiers are used by the ice cream industry.

The construction of two additional emulsifier plants, together with Atlas's designation of a Food Industry Division, is looked upon as particularly promising for the development of improved products, greater savings and faster service for all sections of the food industry.

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Here is a revolutionary laboratory blender—now complete with removable high speed intensifier bar. You get perfect blending, in shortest time, even with materials that tend to agglomerate. This versatile **p-k** lab blender is ideal for new product research, pilot plant blending and quality control analysis. Virtually all materials, regardless of varying densities, are quickly and easily blended. Stainless steel intensifier bar operates at pin-tip speeds up to 2200 fpm and can be quickly removed for cleaning or straight blending. Rotation of blender continuously supplies fresh material to pins, where high impact and shearing action breaks up lumps instantly, and disperses liquids into dry materials. Absolute uniformity can be obtained in 3 to 4 minutes. **p-k** lab blenders are available for immediate delivery from stock. Information available on all sizes up to 250 cu. ft. for production use. Write today.

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4-qt. size $245.

The **p-k** twin shell lab blender, with removable intensifier bar, will find ready use in process laboratories. Benefit from its use in your own operations. Shipped immediately from stock.

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*Patented

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Blender is driven by chain and sprocket drive by G.E. 1/20-hp gearhead motor. Intensifier bar by 1/12-hp motor with V-belt drive. Both motors for 110, single-phase, 60-cycle current ONLY. Separate toggle switch for each motor. Shell rotates at 32 rpm. Covers are dust tight, with Neoprene gaskets. Stainless steel blender shells available.

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p-k guarantees all materials and workmanship for one year from date of shipment.

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B&I. . . . . .

and increases the salinity of the river and its tributaries "for many miles upstream." If salinity goes up to 150 ppm. of chlorides, deterioration of plant equipment—even including stainless steel—can take place, and corrosion of pumps and compressors might disrupt numerous manufacturing processes.

Even the plants that obtain water from wells would be affected by excessive withdrawal of water from the Delaware, Gassaway continues. He explains that studies by the state geologist have shown a direct relationship between the salinity front of the Delaware River and the salt contamination of industrial wells near New Castle, Del.

Du Pont's Edge Moor plant, representing a $20-million investment, requires an average of about 15,000 gal./minute or 21.6 million gal./day for cooling processes, Myers testified. He told the special master that this plant, with 725 employees and a $3.8-million annual payroll, might sustain property damage and interruption of production if too much fresh water were pumped out of the Delaware from upstream.

One possible basis for settlement of the four-state controversy: let New York take the water it's asking for, providing New York agrees to maintain a certain minimum flow in the river by releasing water as needed from upstate reservoirs; allow New Jersey and Pennsylvania to construct a dam and share the water stored in the resulting reservoir. All parties agree with the late Justice Oliver Wendell Holmes' remark that a river is a treasure that must be rationed among those who have power over it.

LABOR. . . . . .

Over Union Protests: Most of the Taft-Hartley amendments recommended by President Eisenhower in January are advancing toward a vote in both houses of Congress—despite vigorous objections by labor union leaders. All three of the largest unions in the chemical field are echoing the charge by a CIO spokesman that the amendments adopted by the labor committees make up "an irresponsible and unjustified effort to undermine the effectiveness of unions."

One of the most controversial of the proposed amendments is the one that would require a membership vote to be taken to determine whether a strike should have "protected" status—meaning that if a strike is not sanctioned by a majority of employees, management would be free to fire the

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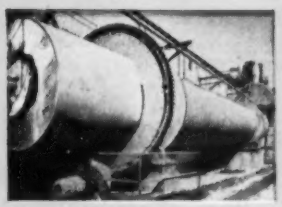

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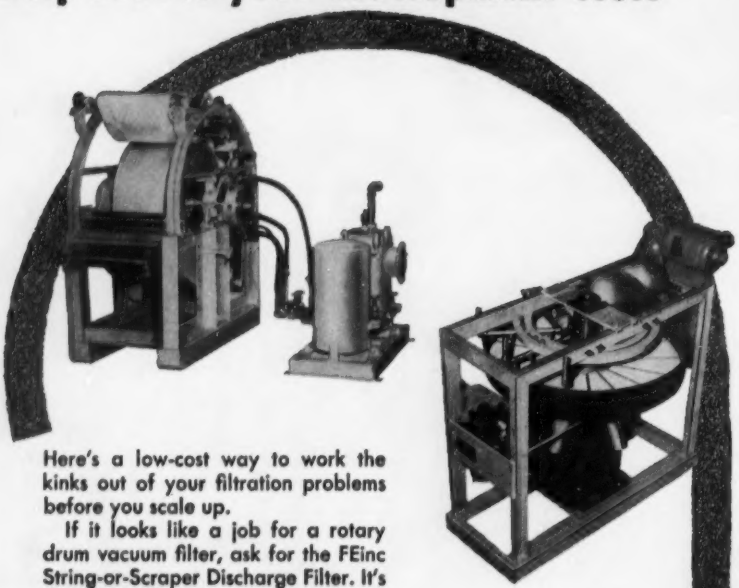
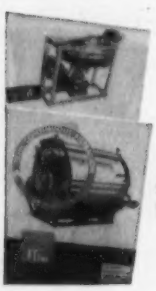


Here's a low-cost way to work the kinks out of your filtration problems before you scale up.

If it looks like a job for a rotary drum vacuum filter, ask for the FEinc String-or-Scraper Discharge Filter. It's furnished with *both* the FEinc String Discharge and the FEinc Scraper Discharge mechanisms. You can try first one, then the other. It also has the FEinc submergence washing and compression dewatering mechanisms. These can be operated separately or disconnected if desired. This all-purpose pilot plant filter is available to you on a unique rental-purchase plan, requires no capital investment. Ask for details.

If it's a relatively free-filtering job, such as a coarse crystalline or fibrous pulp, try the simpler FEinc Horizontal Filter first. Particularly good for counter-current or multiple-stage washing. Only 3 ft. dia., with amazingly high output.

Whatever your problem, if it's *continuous* filtration, talk to FEinc first. Our engineering service is backed by 35 years of experience, and by our well-known ability to deliver filters that are tailor-made to fit the job . . . at no more than standard costs.



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NEW JERSEY'S SMITH: For curb on dictated strikes, he'll keep plugging.

strike leaders and hire new men. This provision was o.k.'d by the House labor unit, 16 to 8; but it failed to clear the Senate labor committee because Republican members didn't agree on whether the government or the union should conduct the vote. Sen. H. Alexander Smith (R., N. J.), chairman of the committee, gave notice that he would try again when the bill comes before the full Senate.

Another proposed amendment that the Democrats are fighting is the one giving each state more freedom of action in dealing with "emergency" strikes not being handled by federal agencies. Both of these clauses, if enacted into law, could strengthen the position of chemical management in labor disputes.

•

Caution on GAW: CIO unions definitely are out for the guaranteed annual wage in contracts for 1955, but they haven't decided on the details of either their demands or their approach. Most keenly interested in GAW among the CIO tribes: United Gas, Coke & Chemical Workers, United Rubber Workers, United Steelworkers, and United Auto Workers. One collateral prize for the first major success in GAW bargaining: greatly enhanced prestige in labor union circles for whichever union leader can claim credit.

On the other side of the fence, management is studying the problem of steady, high-level employment and trying to work out both its own solution of that problem and arguments to counter GAW demands by labor unions. One of the latest of these counterarguments comes from the

Q. *Could mica insulation be made sufficiently uniform and "leak-proof" that thin layers could keep thousands of volts within bounds?*

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This is mica mat by General Electric—so *uniform* that even the tremendous voltages within huge turbine generators can find no hole, no crack, no weak spot.

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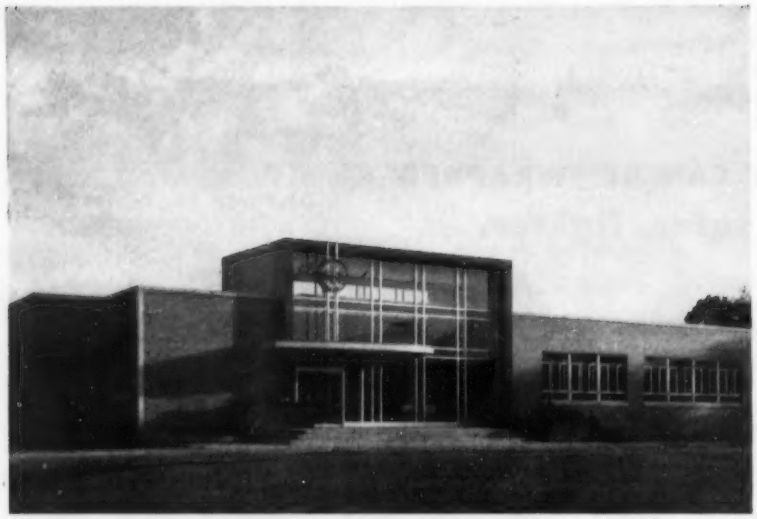

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B & I. . . . . .

National Assn. of Manufacturers:

"It must be expected that labor—like business—will seek means of maintaining the market for its services. But . . . most of the measures proposed by union leaders to maintain high employment – including GAW—tend to restrict rather than to expand the market for labor's services. No business man, facing a decline in demand for his product, would meet the problem by raising his prices—nor would he exact new obligations from his customers. He would try to make his product cheaper and easier to buy, in every way possible."

•

Companywide Councils: The committee working for merger of various labor unions into one big "Oil & Chemical Workers International Union" says that the new union "will establish companywide councils to coordinate and unite the efforts of all members employed by the same company." These councils, the committee explains, will bargain "on such companywide problems as pension plans, savings plans, hours of work, etc."

Committee members promise that each union local will run its own affairs, with the international organization reinforcing and coordinating the locals' efforts.

"The international," the committee declares, "will create a stronger bond of brotherhood between all the men who work for wages in oil, chemical and related industries."

FOREIGN. . . . .

Exports/Switzerland: Total Swiss exports of pharmaceuticals in the first two months of 1954 were up 7.3%—to 52.9 million francs against 49.3 million francs in the comparable period a year ago. Exports of aniline dyes and indigo accounted for most of the increase, jumped from 32.2 million to 41.2 million francs.

•

Sulfuric Acid/Austria: The Oesterreichische Stickstoffwerke, Linz, Austria, is onstream with a new sulfuric acid plant. Capacity: 40,000 tons of sulfuric acid, 5,000 tons of sulfur per year. Next in line for completion: superphosphate facilities, which will virtually halt Austrian imports of the fertilizer.

•

Nitrogen Fertilizer/Poland: According to a late dispatch from Warsaw to the official Russian newspaper *Izvestia*, Poland has just placed a new nitrogen fertilizer plant in operation near Kendzezhin on the Odra River. When in

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Lower Maintenance Costs with Barrels and Drums of ENDURO® Stainless Steel

Cost of container maintenance is trimmed by ENDURO—the lustrous metal that resists corrosion, and hard use and abuse—never needs painting—lasts indefinitely. ENDURO offers greater safety, too—inert to most chemical and food products.

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METAL BARRELS AND DRUMS

B&I. . . . . .

full operation in 1955, the Kendzezhin units will produce 1 million metric tons/year nitrogen fertilizer—double Poland's entire 1952 output.

•

Ammonium Sulfate/China: The Japanese Ministry of International Trade and Industry has approved export of 5,000 tons of ammonium sulfate to Communist China at $63/ton f.o.b. China. In exchange, Japan will import 62,500 tons of China's industrial salt. The contract—first between the two countries since the fertilizer embargo was lifted last September—was concluded between Toko Bussan Co., Tokyo and China's Export and Import Corp. Delivery will be made sometime this month.

•

Ammonia/Canada: The Consolidated Mining and Smelting Co. of Canada, Ltd. will expand ammonia facilities at its Alberta Nitrogen Dept., Calgary, Alberta. Capacity increase: 50,000 tons/year.

•

DDT/Syria: Representatives of the U.S. Technical Assistance Administration are in Damascus discussing with Syrian authorities the possibility of establishing a DDT plant in Syria.

•

KEY CHANGES. . .

Dan E. Morgenroth, to manager, General Construction Materials Sales, Owens-Corning Fiberglas Corp., Toledo, O.

C. E. Webb, to assistant to the president, Sharples Chemicals, Inc., Philadelphia.

Eugene J. Sullivan, to general manager, Resin and Chemical Dept., Chemical Div., The Borden Co., New York.

Thomas A. Printon, to chairman of the board, Nopco Chemical Co., Harrison, N. J.

J. P. Ekberg, Jr., to assistant to the president and secretary of the executive and finance committee, Monsanto Chemical Co., St. Louis.

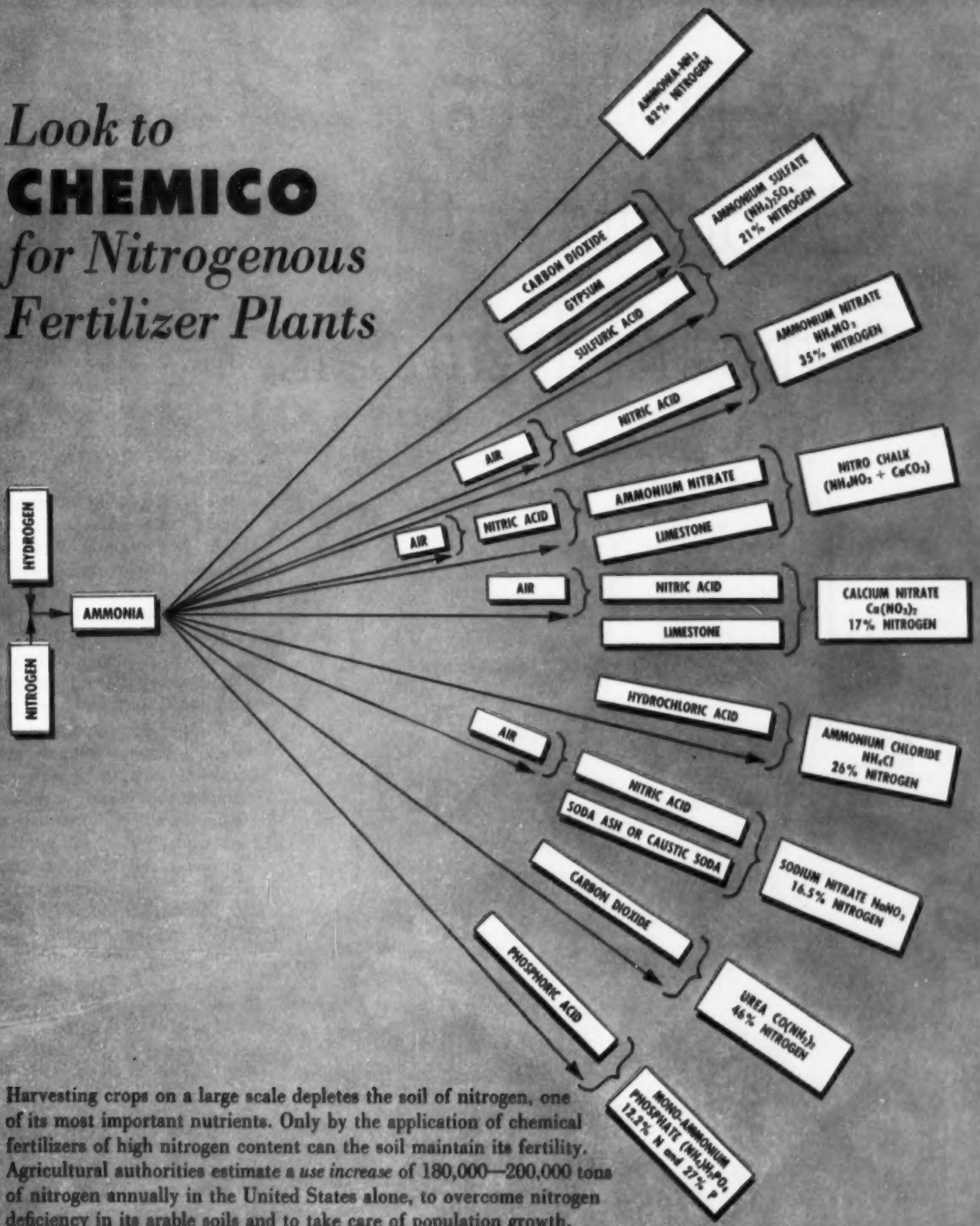
Dan Schoenholz, to director, Product Development Dept., Foster D. Snell, Inc., New York.

M. W. Mackenzie to president, and **Harold Blancke,** to chairman of the board, Canadian Chemical & Cellulose Co., Ltd., Montreal.

DIED. . . . . .

Pierre S. du Pont, 84, former president and chairman of the board, E. I. du Pont de Nemours & Co., Wilmington.

Look to **CHEMICO** *for Nitrogenous Fertilizer Plants*



Harvesting crops on a large scale depletes the soil of nitrogen, one of its most important nutrients. Only by the application of chemical fertilizers of high nitrogen content can the soil maintain its fertility. Agricultural authorities estimate a *use increase* of 180,000—200,000 tons of nitrogen annually in the United States alone, to overcome nitrogen deficiency in its arable soils and to take care of population growth.

The Chemico organization is specially qualified to design and construct plants for the production of ammonia and nitrogenous fertilizers of all types. It offers a world-wide service backed by 40 years of experience.

NOTE: Formulae and percentages are on a theoretical basis. Fertilizers are produced in various grades.

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After the test injection of Armeen® C—Armour's corrosion inhibitor—the foreman made it a point to inspect the pipes before their next cleaning. When he first saw the tube bank—without any corrosion—he thought the pipes had already been steam-cleaned. But Armeen C—not cleaning—was responsible for the absence of corrosion! And corrosion engineers estimate that these condensers will last for at least 10 years with Armeen C injections!

Only one tablespoon of Armeen C in four tons of gasoline will prevent corrosion in an indefinite length of pipeline. Another example of this amazing economy is in petroleum water flooding where one tablespoon of Arquad® T-2C will kill bacteria in 5 tons of water and reduce corrosion by 99.5%! Send the coupon for more anti-corrosion information, samples of Armeen C and Arquad T-2C, and free booklets on all of Armour's economical Armeens and Arquads.

Kitchen finishes stay sparkling white for years— when they're made with this top fatty acid!

Kitchen fumes and harsh detergents take their toll on shining white finishes, as every alkyd producer knows. Then the refrigerator or kitchen stove turns yellow. To help alkyd manufacturers prevent this discoloration, Armour has developed a product which is tailor-made for the alkyd industry. It makes whites stay white.

This product is Neo-Fat® 12, Armour's high purity lauric acid. Neo-Fat 12 modified alkyds offer the best non-yellowing properties available. The very high lauric and very low unsaturated fatty acid content (less than 1%) contribute maximum heat and light stability in alkyd plasticized urea and melamine resins.

Neo-Fat 12 alkyds and resins support one another to produce clear, strong, hard films that are tough and flexible. They won't embrittle or "check" on aging. They exhibit outstanding resistance to greases, soaps and other chemicals. Samples of Neo-Fat 12 are available—send the coupon with your letterhead and test Neo-Fat 12 in your alkyds.

Shaving creams and shampoos stay fresher longer with Armour's stable oleics!

Armour chemists reported recently that Armour oleic acids have withstood 18 months of normal storage without losing any of their stability characteristics. Although opened to the atmosphere periodically, these oleic acids resisted oxidation and rancidity; they still have excellent color, low unsaponifiable and high acid value.

This outstanding stability means that soaps made with Armour oleics can be kept under constant heat for weeks and still smell as fresh as the day they were made. It means longer life and freshness for shaving creams, shampoos, soaps, waxes and other products.

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First time unsaturated secondary fatty amines ever offered to industry!

Two new unsaturated secondary amines produced from tallow and soya are now available for your testing. These are the first unsaturated secondary fatty amines to be offered to industry. These compounds are identified as Armeen 2T and Armeen 2S respectively and have the following general configuration:

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Because of the unsaturation in both compounds, these two secondary amines are more easily liquefied than the corresponding saturated secondary amine (Armeen 2HT), and will show better solubility in organic solvents.

These products are so new that possible uses have not yet been explored extensively. However, the chemist acquainted with the reactivity and polar substantivity of amines and their derivatives will recognize the potentialities of Armeen 2T and Armeen 2S in corrosion inhibitors, lubricant additives, rubber processing, textile treating compounds, emulsifiers and de-emulsifiers, etc.

Samples of both of these new secondary amines are available for your testing. We will be pleased to give you technical assistance in using these products.

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- ☐ Armeen 2T
- ☐ Arquad T-2C sample
- ☐ "Combat Corrosion" booklet
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ARKANSAS' MOSES: From TVA, unfair competition.

TVA'S NORRIS DAM: In the middle . . .

Who's Got a Stake in Public Power?

The favored few who can buy the cheap electricity, says C. Hamilton Moses, chairman of the board of Arkansas Power & Light.

Everyone, says Tennessee Sen. Albert Gore, as the old debate on TVA waxes anew.

The chemical industry is the man in the middle. Its stake is big, but its voice is small.

As the appropriations bill for the Tennessee Valley Authority winds its way through Congress this week* on its road to approval, the old arguments on TVA are waxing as they never have before. Here's the background:

The present budget calls for a TVA appropriation of almost $142 million. This will leave it with an assured load-carrying capacity of 9,483,685 kw. by the end of fiscal 1957. But by that time, TVA estimates its demands will be 9,500,000 kw. Officials of TVA maintain that they should have a slight cushion of extra capacity, that instead they face a deficit of 0.2%.

Moreover, they state, their projected demands are based on the assumption that the Atomic Energy Commission will relieve TVA of the necessity of supplying between 500,000 and 600,000 kw. If the AEC does not find an outside source for this large block of power, TVA assumes that it will have to start construction of new capacity to take care of it. Unless it knows in time, it may not be able to deliver the power on schedule. That would be, says TVA Chairman Gordon Clapp, "disastrous."

What it boils down to is this: TVA is itching to get started on a new steam generating plant at Fulton and on some other new units. But private utilities take a dim view of this, say that TVA offers them unfair competition. And Congress, on the whole, is more inclined to curtail TVA's power-generating activities than to enlarge them.

The immediate potential impact for the chemical process industries is clear. If, as TVA states, a power shortage develops in its area in 1957-58, the chemical industry will be among the first to feel it.

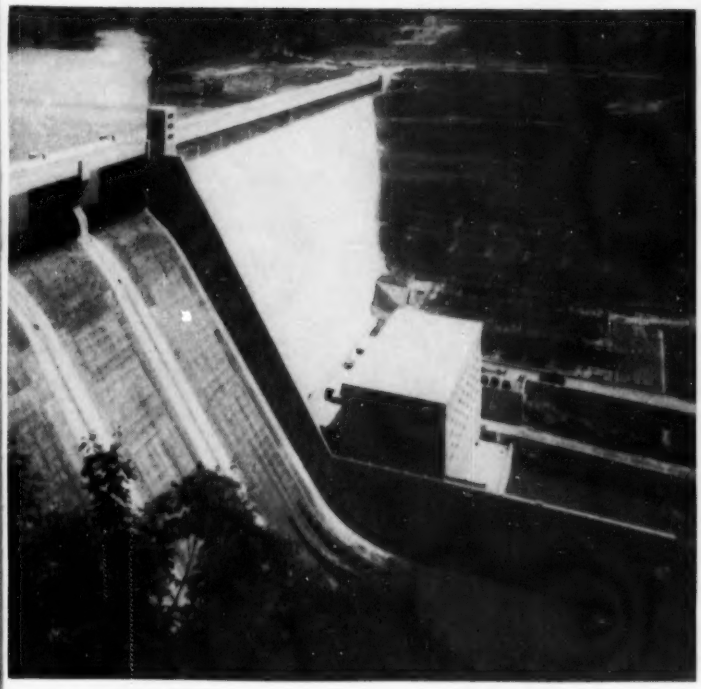
For the long range, the picture is somewhat cloudy. The underlying issue in the dispute on TVA, as on power development in Niagara Falls and other areas, is what the role of the federal government should be in generating power. On that score, the chemical industry is in a paradoxical situation. As one of the biggest industrial consumers of electricity, it thrives on low-cost power. And TVA, with its cheap electricity, has played a major part in the growth of the industry.

By and large, however, industry management sides with the public utilities politically and philosophically. They'd rather buy their power from a private source, even at a slightly higher price.

Private Power Push: In any case, private power enthusiasts are exerting strong pressures on Congress to review TVA's entire bookkeeping system.

Probably the most articulate spokesman for this group is C. Hamilton Moses, chairman of the board of

*The bill has just been approved by the House after some stormy sessions in committee. It's now under study by the Senate Appropriations Committee.



. . . a public debate.

TENNESSEE'S GORE: From TVA, cheaper power.

Arkansas Power & Light Co. Moses describes himself as a good friend of the TVA. He has had cordial relations with it over a period of years. He admires its management, says the agency can build a power plant as cheap as anyone.

But, if he's a good friend, he's also a severe critic. On the slightest provocation, he'll give a discussion of how and why TVA is unfair to private utilities. His basic contention is that TVA can charge lower rates because it doesn't have to pay taxes or interest to the government.

To him, it's a matter of simple arithmetic. In the fiscal year ending June 30, '53, for instance, TVA reported a gross revenue on its power sales of $104,877,869. After deducting expenses (including payments "in lieu of state and local taxes") it was left with a balance of $19,294,-109.

If you subtract from that the taxes that a utility would pay on that much revenue, the TVA ran a deficit of almost $57 million. Then, if you add to that the interest and amortization of Treasury funds expended by TVA for power facilities, you find that TVA failed to pay its way by $91,540,104.

This, says Moses, is an expense incurred by all U.S. taxpayers for the benefit of the relatively few who purchase power from the TVA. If the TVA would pay taxes and interest as a utility does, says Moses, its operations would be on a fair basis. "And," he adds, "we'd meet their rates in the morning."

Questions on Costs: There are a number of people who disagree violently with Moses' figures. Sen. Albert Gore (D., Tenn.), for instance, has debated the whole question in public with him. According to Gore, the reason that private utilities don't meet TVA rates is not a question of bookkeeping, but a matter of a fundamental difference in philosophy.

Gore points out that TVA is recognized throughout the world as a model of integrated river valley development. He feels that, just as the people throughout the country benefit from harbor developments in cities like New York, San Francisco and Houston, the whole country stands to gain from the work done by TVA.

He adds further that the real reason for TVA's lower rates is its greater efficiency. He claims that the agency's hydroelectric production expenses were less than half that of private-utility industry that steam power-plant production expenses (0.9 mill/kwh.) were only three quarters that for private utilities (1.2 mills/-kwh.). And that does not include fuel costs, which he says are only four fifths private utilities' costs.

On the question of taxes, he states that TVA pays money to state and local governments comparable to that paid by utilities. He thinks there is no reason for TVA, a government agency, to pay a tax to another government agency. This is how he reasons:

Private utilities are in business to profit—and the higher the profit, the more taxes they pay. TVA, on the other hand, is out to broaden the use of electricity, to provide it to the greatest number of people at the lowest cost.

Moreover, says Gore, the money that TVA does make is returned to the Treasury. Over the past five years, this has totaled $120 million—enough to give the government a 2% return on its investment, with an amount left over equal to a contribution of $12/year from each customer served by local distribution systems throughout the TVA area.

Both sides, of course, can summon up several other potent arguments to support their positions. But probably the biggest difference is in their basic approach. Advocates of private power feel that TVA is creeping, or even rampant, socialism. But the opposite side sees no danger of socialism at all. And they feel that as TVA grows, so grows the nation.

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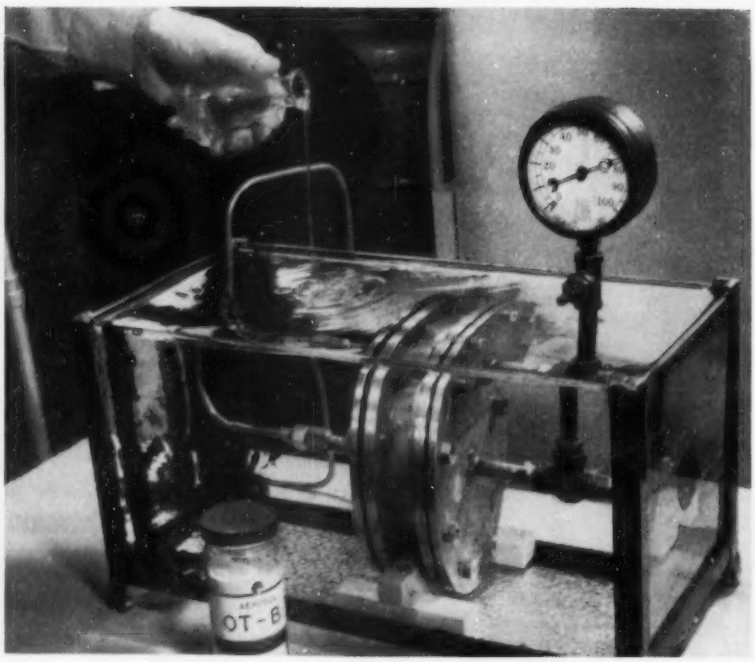

MAN CHECKS pressure filter for leaks. He spots pinholes by . . .

Cutting the Tension

Theories and kettles that don't hold water are usually scrapped or repaired. But sometimes, as American Cyanamid points out, kettles that do hold water should be repaired also. How it arrived at that conclusion:

Normally when you want to check a kettle for holes, you fill it with water to see if it leaks. Unfortunately, however, water has a relatively high surface tension. This causes it, in effect, to form a thin skin around the

SAME TECHNIQUE is applied for testing large tank.

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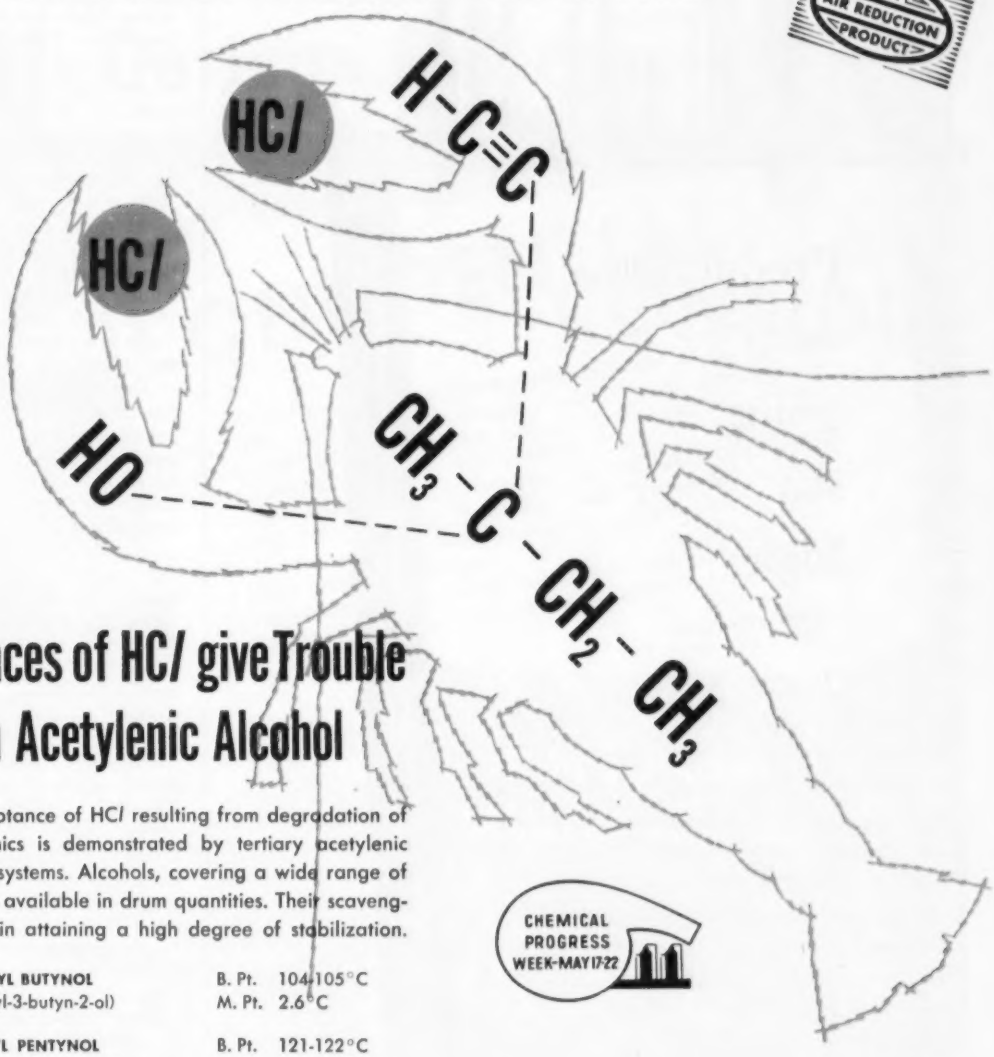

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Quantitative acceptance of HCl resulting from degradation of chlorinated organics is demonstrated by tertiary acetylenic alcohols in many systems. Alcohols, covering a wide range of volatility, are now available in drum quantities. Their scavenging action assists in attaining a high degree of stabilization.

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ETHYNYL CYCLOHEXANOL (1-ethynylcyclohexan-1-ol)	B. Pt. 180°C M. Pt. 32°C
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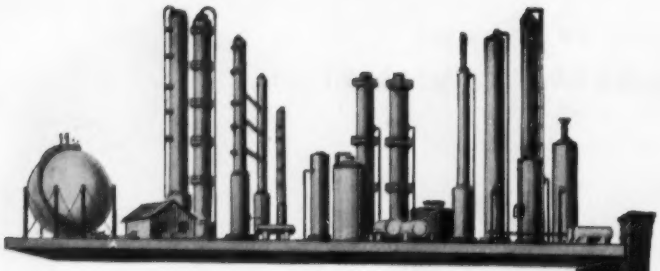

Production costs going sky high ?

Call in SD, specialists in the organic chemicals field — not only in new plant design but in revamping and improving *existing* facilities.

Typical example: The management of a large manufacturing company asked SD for a check-up on their organic chemicals process, to see if production costs might be reduced. SD soon came back with the answer — a few strategic changes, at merely nominal capital investment, which raise the capacity of the existing plant at least 20%.

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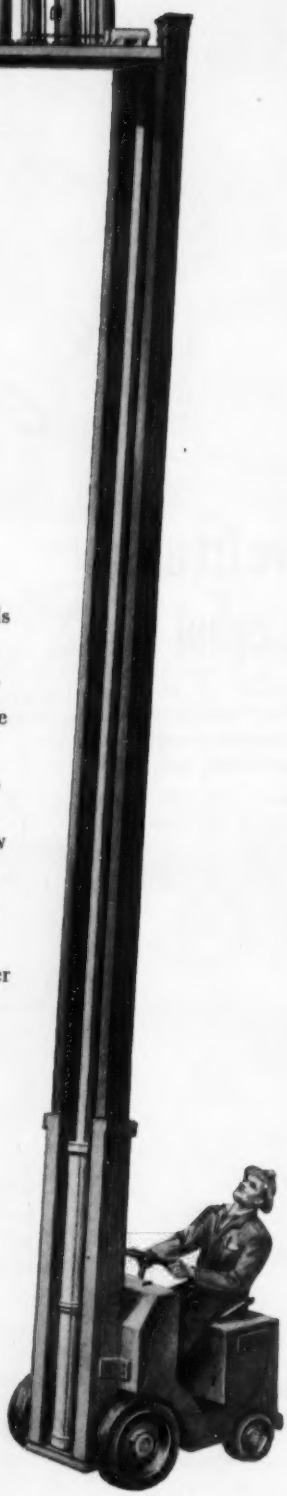

SCIENTIFIC DESIGN COMPANY, INC.

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inside of the kettle, thus keeps the water from seeping through some tiny holes. If the kettle is going to be used to hold water or a similar substance, this would probably be all right. If, on the other hand, it's to be used to contain an organic (like acetone, benzene or carbon tet) that has a considerably lower surface tension, a hole not detected by water could easily cause trouble.

Cyanamid hit upon a simple solution to the problem: it found that by adding a small quantity of its Aerosol OT-B, the surface tension of the water is lowered to a point where it can effectively detect minute holes.

The same technique—in reverse—can be adapted to testing regenerator coils, instrument cases, small tanks, and other items of equipment that have to be air-tight. In that case, the article is submerged in the liquid and compressed air is applied to the inside. A leak is detected by observing the water for bubbles. Cyanamid found that the test is more effective when the water contains some surface-active agent.

Another attractive feature of the method in testing for air leaks: the wetting agent permits the use of lower air pressure. At the Bridgeport Thermostat Division of the Robertshaw Fulton Co. (Bridgeport, Conn.), for example, sealed hydraulic controls and other instruments were tested at 2,000 lbs./sq. in. by nitrogen from a cylinder. The company has discovered that by adding the wetting agent it could run the tests with its handy compressed air supply, which has a pressure of only 75 lbs./sq. in. Cyanamid, of course, is plugging the method as a means of upping sales of its own product and though it does admit that any surface-active agent could do the same job, it feels that its Aerosol OT-B has an edge on other products because of its potency/cost ratio.

Progress in Jig-Time

Atomic power, peacefully bridled for industrial use, took a giant step closer to realization last week (CW, April 10, p. 32), lent added substance to the rather vague shape of a new chemical process industry. Months before most observers expected any sign of action, the AEC's new five-year program for reactor development actually got rolling.

Congress recently voted $190 million to push the reactor program along. The AEC moved in jig-time, lined up companies to start building two new reactors in addition to the previously

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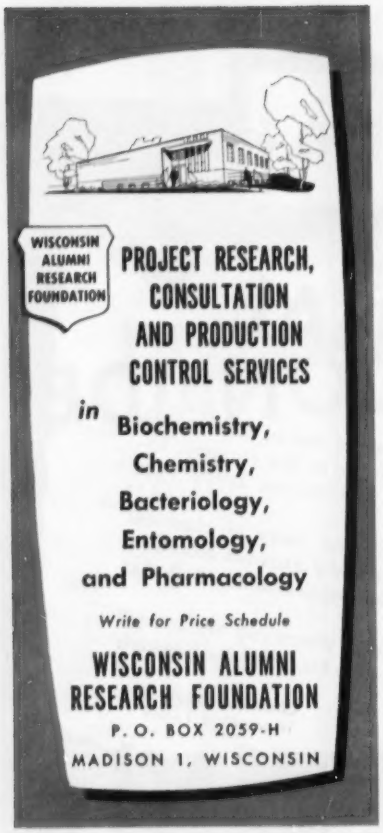

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PRODUCTION . . . . . .

announced (*CW, March 27, p. 50*) pressurized water reactor, to be built in the Pittsburgh area by Westinghouse Electric Co. and Duquesne Light Co.

Program Fission: From AEC's $190-million budget for new reactors, $85 million has already been allocated for the Westinghouse-Duquesne 60,000-kw. power plant. The balance will be split among five other reactor projects employing four different technological approaches.

With work slated to be started shortly, the two newly contracted for units are the $17-million "boiling water" reactor and the $10-million sodium-graphite reactor. AEC currently is selecting an architect-engineering contractor for the former, has already reached an agreement with North American Aviation Co. on construction of the latter. Both reactors are scheduled to be put in experimental operation in 1956.

Based on experimental work carried out by the AEC last summer, the boiling water reactor "will be an attempt on an intermediate scale to develop an economical method of getting the heat out of the reactor by using the boiling reactor water directly." The design calls for reactor steam to be used directly in a turbo-generator—a possible step toward eliminating the costly primary heating circuit. It will have an electrical capacity of 5,000 kw.

The boiling water reactor will be fueled with enriched uranium, moderated and cooled with either ordinary (light) or heavy water. The uranium enrichment is needed to make a natural uranium-light water reactor (or heavy-water reactor of small size) critical; it wouldn't be necessary in a large heavy-water boiling reactor.

Apparently overcome are theoretical drawbacks to this type of operation. One objection: boiling in the reactor core would cause continual changes in reactivity and might result in unstable operation. Another: steam might carry enough radio-activity to damage the turbo-generator and other related mechanisms.

Cal. vs Kw.: The sodium-graphite reactor has no such obvious drawbacks, but the project is unusual in that while the reactor will furnish 20,000 kw. of heat, there are no present plans to convert this heat into electricity. For experimental purposes, the heat produced will be exhausted to the atmosphere through a relatively inexpensive sodium-to-air heat exchanger.

As the name suggests, the reactor will be sodium-cooled and graphite-moderated. It will use metallic fuel elements of either slightly enriched uranium or a combination of thorium and uranium-233, thereby providing the advantage of high temperature without high pressure.

A prototype, the sodium-graphite reactor will resemble a full-scale power plant in using tank-type reactors, similar fuel arrangements, and in having the entire reactor structure below ground level. Tab for the prototype will run $10 million, of which North American will pick up $2.5 million and AEC the rest.

Three to Go: Still uncontracted for, three other projects round out the current AEC reactor program, are expected to get under way shortly. Two of the projects actually represent a single approach toward a practical homogeneous reactor. One would be a slight scale-up of the small homogeneous reactor at Oak Ridge; the other would be a larger homogeneous reactor that would produce 65,000 kw. of heat and breed uranium-233 in a blanket of thorium surrounding the core. Purpose of the smaller reactor will be to furnish information on corrosion, chemical processing and operating conditions unobtainable with the Oak Ridge model.

The remaining project will be an intermediate-size breeder reactor, scaled up from 170 to 15,000 kw. of electric power. Temperatures and steam pressures will be raised to those of a full-scale power breeder reactor auxiliary pumps, heat exchangers and valves will be the same size as those on a full-scale reactor.

Atomic energy is being quickly tamed. This speed-up toward early production of atomic power from industrial-type plants also means that chemical companies will be getting into the act earlier than expected. It isn't hard to see the day drawing near, say AEC officials, when there will be a $100-million/year chemical process industry—to reprocess depleted atomic fuels — growing up alongside the atomic power industry.

EQUIPMENT . . . .

Automatic Changer: General Electric (Schenectady, N.Y.) feels it has stolen a march on the field with its new hook-on volt-ammeter that incorporates a scale changing device. The changer, which it believes to be the first of its kind, eliminates the possibility of reading the wrong scale when measuring voltage and current.

•

Purity Pump: Designed for purity-premium applications in the food, pharmaceutical and other processing

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PRODUCTION . . . . .

fields, its new centrifugal pump, says maker Eco Engineering Co. (Newark, N.J.), will handle a variety of corrosive chemicals, provide noncontaminating service. The pump is constructed of stainless steel, has a maximum capacity of 30 gpm. and a maximum suction lift of 20 in. vacuum, will pump against a 24-lb. head.

•

Joint Effort: Arising from the combined work of Colonial Iron Works Co. (Cleveland) and National Carbon Co. (Cleveland), new impregnated graphite heat exchangers are gaining greater acceptance by rayon spinners.

•

Industrial Fashions: Pioneer Rubber Co. (Willard, O.) is now on the market with new Stanflex gloves for chemical operators. Plastic-coated, the glove features a 47-sq.-in. seamfree work surface that, declares Pioneer, resists abrasion, Additional features: an elastic jersey knit lining that permits high hand dexterity and a PVC coating that provides resistance against a variety of chemicals.

• More along the safety line, Industrial Safety Specialties Co.'s (Perkasie, Pa.) new fireman's hood has a built-in safety helmet, is designed to protect the firefighter's head as well as his face and neck. Made of aluminized asbestos, the hood is said to reflect over 80% of the heat away from the wearer, should prove a boon in fighting chemical fires.

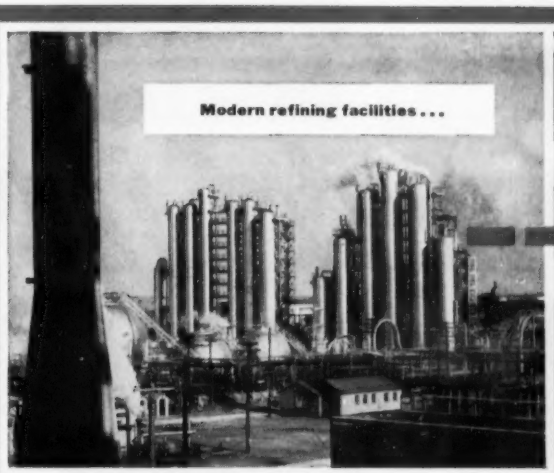
•

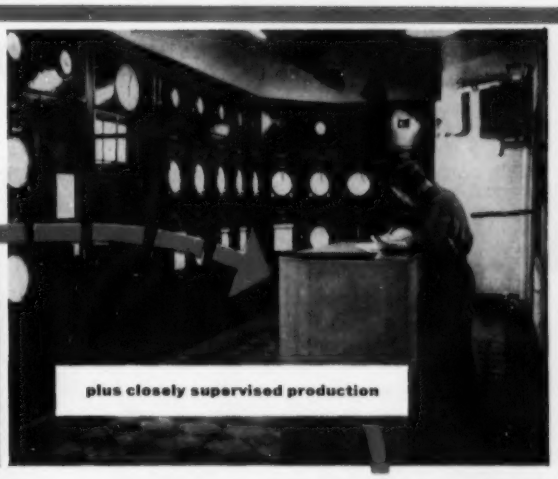
Practical Purity: A high-purity, all-crystalline magnesia refractory for chemical and other industrial uses is the latest offering of Electro Refractories & Abrasives Corp. (Buffalo, N.Y.). Approximately 97% pure, the fabrication, claims Electro, offers added protection against chipping and contamination. A new process, declares the company, now makes possible production of these larger-than-laboratory-size refractories in quantities previously considered commercially impractical.

•

In Brief: A new booklet on electrical modernization in industrial plants is now available from Westinghouse Electric Corp. (Pittsburgh). Titled "Compete or Collapse," booklet B-6133 points out the modernization is the key to successful competition, that the first step in modernization is efficient distribution of power.

• Application of Chronoflo telemetering to level control, pressure control and automatic pump control is the topic of Builders-Providence, Inc.'s (Providence, R.I.) new bulletin 230-k10, Chronoflo Level and Pressure Telemeter.





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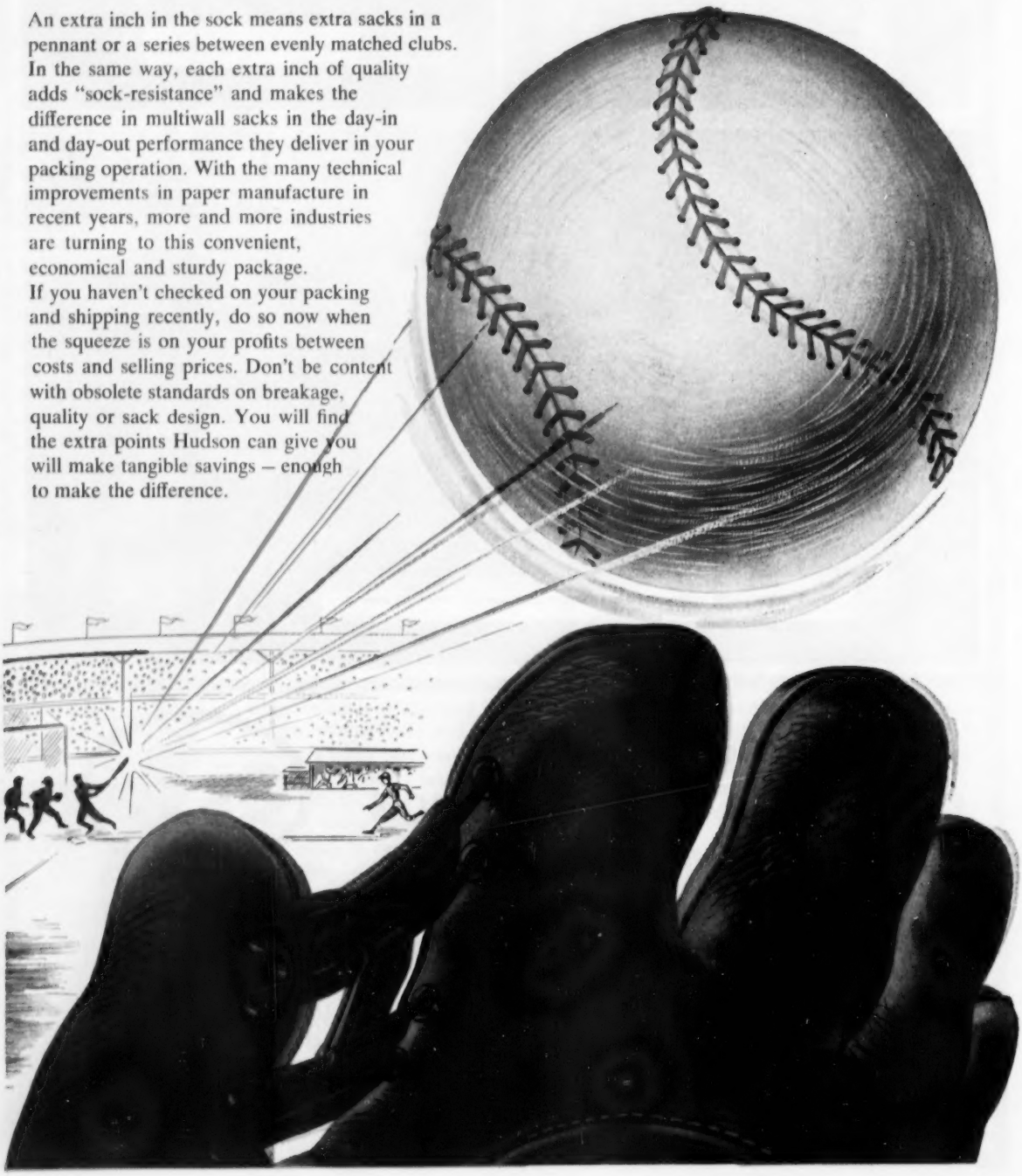

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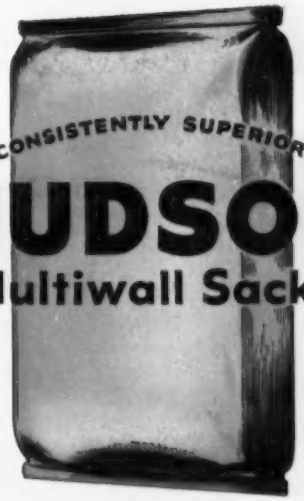

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One man—working eight hours a day, five days a week—would have to labor almost 2,000 years to put in 4 million hours. If during that time he avoided disabling injury, his feat would approach the safety accomplishments, measured in man-hours, of the safest research laboratories in the chemical process industries. The story, told this week by the latest safety figures, is that research is virtually accident-free—where pains are taken to keep it that way.

But there's still room for improvement.

Most in need of improving are the smaller organizations, which generally do not maintain and enforce systematic safety programs. For these, a new book, "Guide for Safety in the Chemical Laboratory," can solve a lot of problems. Edited by the general safety committee of the Manufacturing Chemists Assn. (and slated for publication* in May), the manual details the best in safe laboratory design and practice.

Latest (1952) available data from National Safety Council cover 49 chemical industry laboratories, show a frequency rate (injuries/million man-hours) of 1.64; severity rate (days lost/thousand man-hours) of 0.09.

Several labs were considerably better than average. Dow's Midland (Mich.) laboratories, for example, had a frequency of 0.96, severity of 0.01 in 1952, and in 1953 frequency fell to 0.85, severity rose to 0.69.

According to a CW survey of the new 1953 figures, a few laboratories (*see box*) have even gone over 5½ million man-hours without an accident. Such records are remarkable in view of the variety of mishaps that can occur on the job. Employees on company business at one large laboratory (over 2 million man-hours/year) had two automobile crashes, which accounted for 25% of its accidents in 1953. Another ranking industrial concern (800,000 research man-hours/year) improved its severity rate from 7.5 in 1952 to 0.02 in 1953. Reason: a fatality in 1952 was charged, in accordance with National Safety Council practice, as 6,000 days lost. The total of all other accidents for both years represented only 39 research days lost.

Many companies don't reveal separate safety figures for their research components. This discourages arguments that one operation is more hazardous than another, emphasizes over-all safety consciousness. Management prefers the theme that safety is part of every job, regardless of its nature. However, separate safety records are kept on each operating unit for internal use. Du Pont, among others, checks up on its researchers, finds their injuries are generally of the same variety (falls, etc.) as found elsewhere in the company.

The popular impression that laboratory work is more hazardous than production is belied by the figures.* But the conditioned safety-mindedness of experienced research men is doubtless a large factor in the envia-

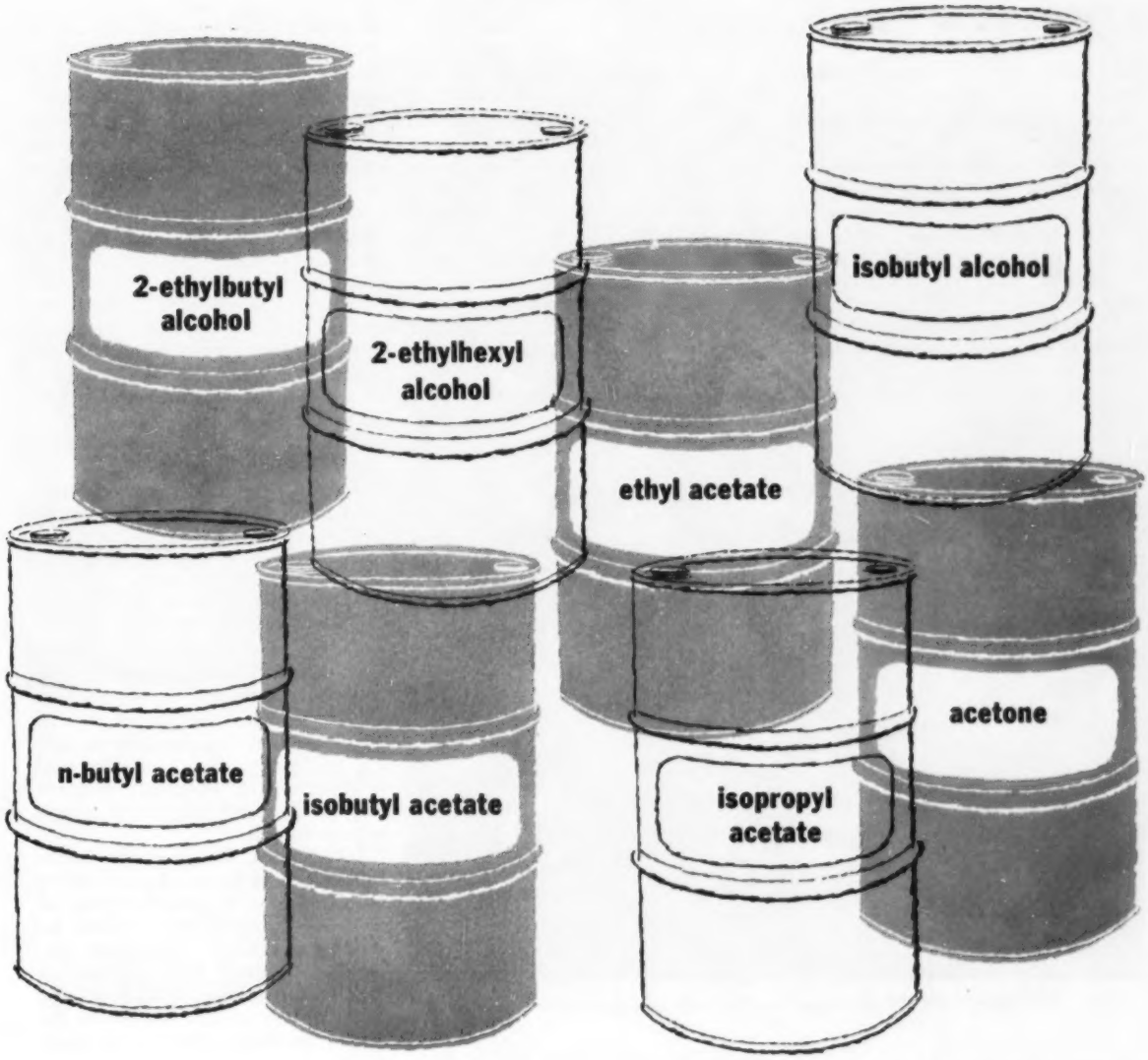
* By D. Van Nostrand, New York.

* In 1952, the chemical process industry frequency rate ranged from a low of 1.4 (synthetic fibers) to a high of 21.4 (fats and oils). The industry as a whole had a frequency rate of 5.10, severity 0.55.

Research Safety Pace-Setters

Company	Branch	Man-hours since last accident
Du Pont	Benger Laboratory	5,771,500*
Union Carbide	Speedway (Ind.) lab of Linde Air Products	5,668,533
Du Pont	Technical laboratory	5,535,200
Phillips Petroleum	Research division	4,000,000
Monsanto	Texas City research dept.	1,139,525

* Never had a disabling injury.
Source: Chemical Week survey.



Eastman solvents

These products are stored in bulk at Kingsport, Tennessee and Lodi, New Jersey, by Eastman Chemical Products, Inc., and in Chicago, Illinois, and St. Louis, Missouri, by DeMert & Dougherty, Incorporated.

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SALES OFFICES: **Eastman Chemical Products, Inc.,** Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cincinnati—Carew Tower; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Bldg.; Houston—412 Main St.; **West Coast: Wilson Meyer Co.,** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.

ble record set by research. When properly indoctrinated, research people prove to be safer than average. At the start, they usually require more explanation of details, more salesmanship by safety directors than is necessary for most tyro plant personnel.

The cost of maintaining safety programs in research (installing safety equipment, etc.) is about the same as elsewhere, according to safety men. Special safeguards usually have counterparts in production facilities.

Where research trends toward the hazardous (e.g., high-pressure studies, radioactive isotopes) technological advances in safety devices usually keep pace. But it takes more than equipment. Nor can any amount of management regulation alone guarantee freedom from injury, just as traffic laws don't eliminate highway accidents. The prescription offered by safety directors: a continuing campaign to promote the realization that safety is everybody's concern.

TEXACO'S KUHN: In a good way to keep an additive secret.

Easy on the Valves

Where gasoline is concerned, the petroleum industry is a house divided. In one camp are those who put their faith in additives as the key to better automotive fuels; the other harbors the "pure petroleum" school, which rallies to the cry, "No metallic deposits." Last week the metal-shunners gained a new disciple in the Texas Co.*

In New York, the company unveiled its highly touted premium gasoline that incorporates, in Texaco's words, "an exclusive, catalytically made compound derived wholly from petroleum."

Identity of the ingredient that is Texaco's answer to the additives is one of the best-kept secrets in the industry. Called Petrox, it is reportedly the achievement of a 20-year multimillion-dollar program of research. Since the mystery material is Texaco-developed and Texaco-produced (in a new plant and at Port Arthur, Tex.), the company is in a good way to keep its secret—for a while, at least.

But it's doubtful whether the possible competitive advantage accruing from secrecy can be maintained for long. Texaco is putting in for a patent, must ultimately tip its hand even if the puzzle is not solved in the interim. The company reports that it has already been approached by parties interested in obtaining a license on the invention. Texaco would doubtless be only too glad to comply with requests for licenses on a hard-to-enforce use patent.

Right now, only this much is definitely known about the undercover chemical: it's a product of a catalytic synthesis, contains neither metals nor phosphorus.

But there's no dearth of information on what it does. Sparking the most interest are claims that the new fuel reduces engine wear. In support of this contention, Wayne Kuhn, manager of Texaco's research division, cites road tests that show that cars using the fuel had 45% less piston ring wear than cars run on another premium fuel.

"On the basis of our whole testing program," Kuhn avers, "we can predict an increase in maximum-performance engine life of 60%."

Added noteworthy test results, according to Kuhn:

- Cars powered with the new gas gave better than 300% improvement in valve life over those driven with other premium fuels.
- Spark plug life was comparably lengthened.
- Ease of starting, rapid warmup, good acceleration, freedom from vapor lock, knock-free performance are also claimed, as are good antirust characteristics.

If Texaco's recent revelation lent any strength to the "pure petroleum" advocates, the advantage was short-lived. While the former's claims were still being weighed, Socony-Vacuum Oil Co. upended the balance with its own new fuel that contains according to Socony, the "most powerful combination of chemical additives ever put into any gasoline to correct engine troubles."

Like Texaco, Socony is mum on the composition of its squad of additives. But as of now, there's no shortage of guessers willing to try to match an additive to each of four Socony performance claims.* The consensus: a dark horse (monocresyl diphenyl, for example) may well be the key to the second gasoline mystery in as many weeks.

Proposition from Akron

Understandably anxious about the future of its synthetic rubber research facilities, University of Akron now has two proposals in Washington: (1) that the government rubber research laboratory it has operated since 1944 be turned over to the university for a minimum of three years; (2) that $5 million in federal aid be provided to continue operation during that period. The aim: to find out whether the laboratory can eventually be wholly run on fees charged to industry.

University officials are convinced that when synthetic rubber plants are privately owned, the research program sponsored by industry will expand greatly, reach higher levels than

* Although Texaco does use TEL.

*Made in this order: (1) relieves preignition; (2) corrects spark plug misfiring; (3) controls engine stalling; (4) combats gum formation in engine.

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the present combined government and commercial research.

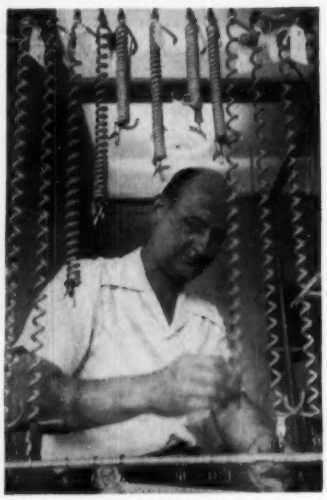
In making its request to Holman Pettibone, chairman, Rubber Producing Facilities Disposal Commission, the university board of trustees explains that at the end of the three years the lab will either start independent operation; ask for additional government funds; or, if such appropriation is not forthcoming, return to the government the title and property plus any unused part of the original $5-million outlay.

Right now, the laboratory employs 176, is working on a number of secret projects for the armed services.

Fluoro Muster

New light on the fungicidal activity of fluorine chemicals is shed by recently released results of Air Force-sponsored research by Illinois State Geological Survey's division of fluorine chemistry.

About 35 fluorinated quinones, hy-



Snapback Seeker

REBOUND is the concern of this Bell Telephone Laboratories (Murray Hill, N. J.) researcher; he's testing the elasticity of plastic samples, trying to develop colored, retractable phone cords. Neoprene is used satisfactorily in black cords, but Bell is now eyeing plastics in the hope of getting a wide range of stable colors. Aside from being a good insulator, the right material must resist deterioration in all climates, keep its shape and color for years.

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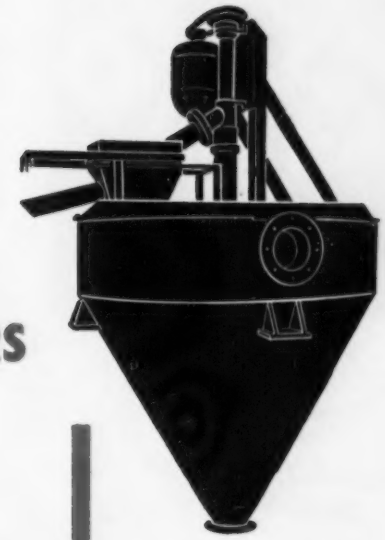

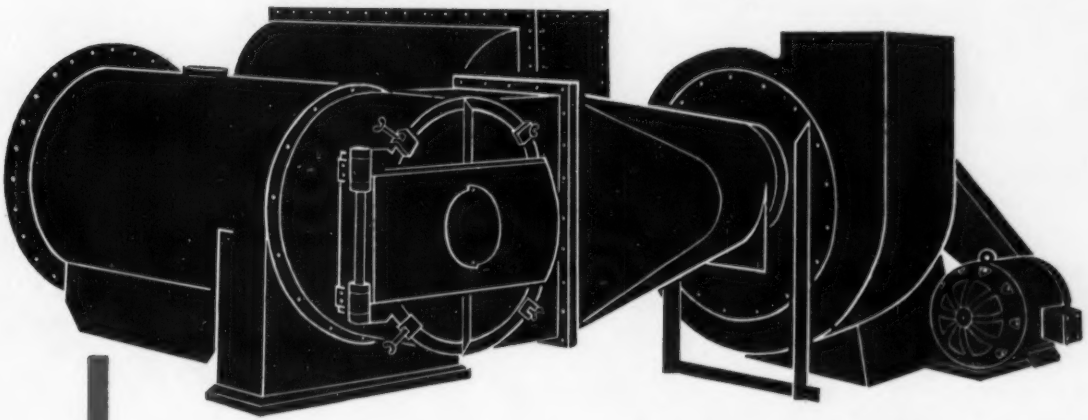

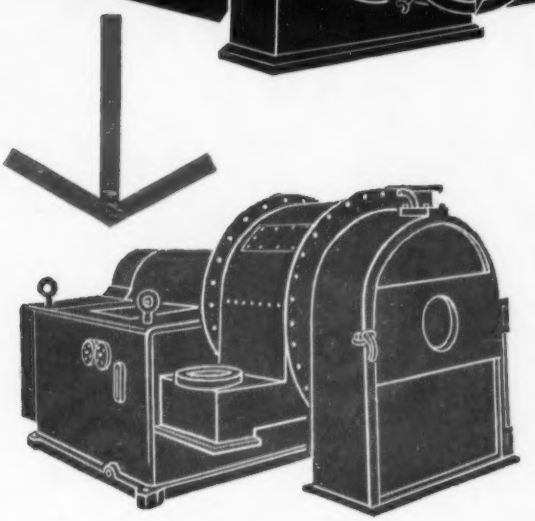

BAKER PERKINS Concentrating Screw Type Feeders, designed for use with continuous centrifugal installations, insure a uniform rate of feed to the centrifuge and increase the percentage of solids in the feed. The result: higher centrifugal efficiency, lower maintenance costs and greatly improved product quality.

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Bareco microcrystalline waxes have long been leaders in their field. Now in use in literally thousands of different wax formulas they have received the widespread applause of scientists in the wax-using industries throughout the world. Bareco waxes are in constant demand, because formulators have learned that "Wax is Bareco's business . . . their *only* business"—and this specialization pays off in more reliable, more uniform wax protection.

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droquinones, phenols, anilines and nitrobenzenes were screened in a search for a compound to stymie fungus damage to cloth.

• Most effective of all test materials was 1-fluoro-3-bromo-4,6-dinitrobenzene, while the 1,3-dihalo-4,6-dinitrobenzenes, as a group, showed top potency. Also highly effective were 2,4-dinitrohalobenzenes.

Cotton threads impregnated with the above chemicals reportedly were fully protected against fungus decay, showed no loss of tensile strength.

• Fluorinated nitrophenols ranked next in potency, followed by fluorinated quinones. Rated "fairly good," the latter group's activity appears to increase with increasing halogen substitution.

• Fluorinated hydroquinones, phenols, nitroanalines, mononitrobenzenes and azobenzenes were least promising, did possess some activity.

Unexpected dividend of the work: the development of the first synthesis of a chlorofluoroquinone by 1,4-addition of hydrogen chloride to a fluoroquinone, treatment of the resulting intermediate with hydrogen peroxide.

•

Directory Change: From now on, the *Directory of Commercial and College Laboratories* will be published by the American Society for Testing Materials (Philadelphia), instead of by the National Bureau of Standards. ASTM is now gathering data for a revised edition to which every known testing laboratory will be asked to contribute. Object of the directory (first published in 1927) is to assist purchasers in selecting labs to make acceptance tests on materials bought according to specifications. It also helps small manufacturers find facilities to test raw materials and finished products. Until the new revised ASTM directory is available, the present version (revised in 1947) will be supplied by the Superintendent of Documents, Government Printing Office (Washington 25, D.C.).

•

Hot Blanket: A heavy dustfall that blanketed Chicago on March 19 and 20 contained three times the normal amount of radioactivity, according to Armour Research Foundation (of Illinois Institute of Technology). The dust, falling at the rate of an estimated 8,000 tons/day, originated from dust storms in nearby states, says Armour's Edward Fochtman. But, he points out, the source of the radioactivity hasn't been pegged. It's

Cooking with a Safety Factor

THE VATS pictured above are charged with the equivalent of prosperity for an Austrian chemical manufacturer. They contain a synthetic product dubbed Plantachrom, which is reported to make leather tanning easy. Developed by the Josef Mayler company (Villach-Seebach), the new chemical is said to allow good results by unskilled workers, has allegedly upped Mayler's business by 300%.

THIS IS **MERCHANTS**

This is Elgin C. Swackhammer Manager of our Milwaukee branch,, and Sales Manager in charge of our Industrial Division. Originally, Mr. Swackhammer was with Wyandotte Chemicals Corporation (September 1929) and in 1936 came to Merchants as Sales Manager of our Laundry Division in Chicago. Since 1943 he has been manager of our Milwaukee branch, and since 1950 also Sales Manager of our Industrial Division. Mr. Swackhammer's long experience in chemical sales especially qualifies him to help you with your chemical problems.

The Milwaukee office of Merchants was one of the original branches founded 33 years ago. This office services all of Wisconsin, as well as the upper Peninsula of Michigan. Five salesmen are ready to help you—and our ample warehouse stocks and three trucks enable us to fill your orders promptly.

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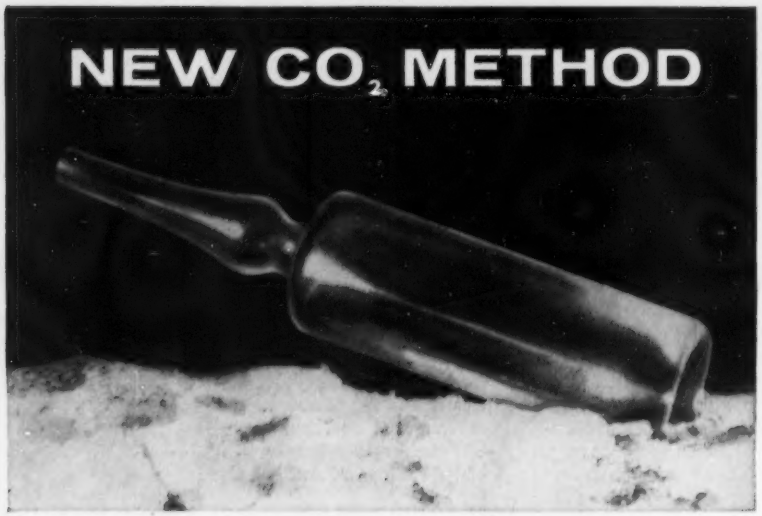
NEW CO_2 METHOD



VASTLY IMPROVES FREEZE-DRYING OF MEDICAL PRODUCTS

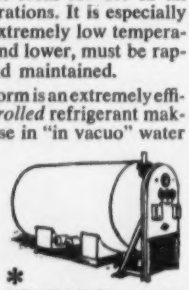
Due to a new technique, CO_2 is again of primary importance in freeze-drying medical products. The new method employs CO_2, not as familiar Dry Ice, but in its *liquid* state. Used in this form, CO_2 offers definite advantages over both Dry Ice and mechanical refrigeration.

New Convenience and Efficiency

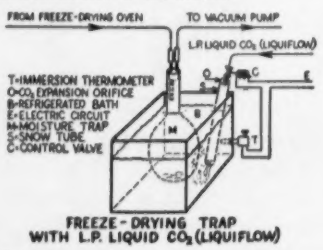
In the new process, liquid CO_2 is stored under pressure in a LIQUIFLOW* receiver. Dry Ice "snow" or liquid CO_2 is instantly available. Waste due to sublimation in storage is eliminated.

CO_2 "snow" is ideal for use in all pre-freezing operations. It is especially suitable where extremely low temperatures, −30° C. and lower, must be rapidly achieved and maintained.

CO_2 in liquid form is an extremely efficient, *easily controlled* refrigerant making it ideal for use in "in vacuo" water vapor removal processes. Piped from the LIQUIFLOW* receiver to condenser bath, liquid CO_2 lowers condensers to desired temperature almost instantly. Precise condenser temperatures—down to −78° C.—may be *automatically* achieved and maintained using liquid CO_2 in conjunction with thermostatic controls. Storage and chopping of Dry Ice and hand charging of condensers is eliminated.



* *LIQUIFLOW CO_2 receiver. Unit stores liquid CO_2 at 0° F. at 300 psi. Installed and serviced by "LIQUID."*



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The LIQUID CARBONIC staff of experienced technicians is always available for consultation and technical assistance in developing and modernizing freeze-drying installations.

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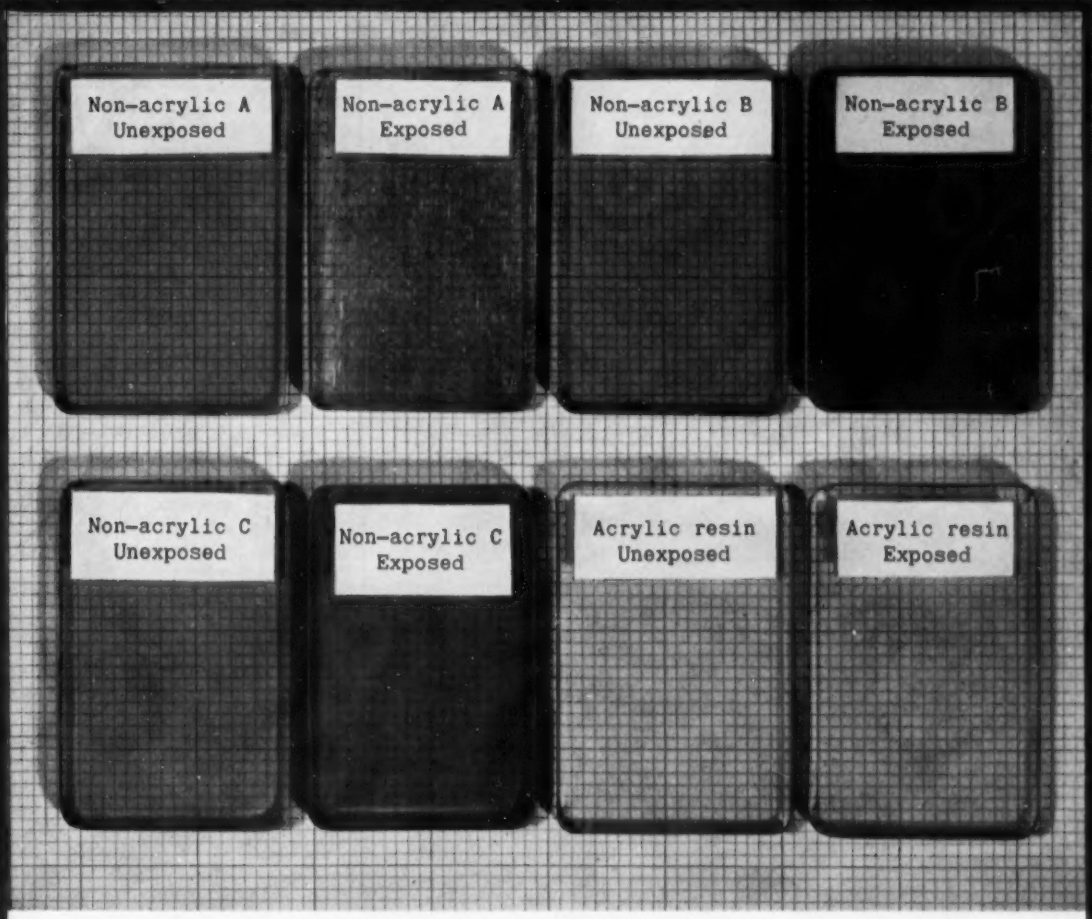
either a freak of nature or an aftermath of the H-bomb tests. Either way, there's no cause for alarm; the level of radioactivity amounted to about 0.01% of that emanating from an ordinary luminous watch dial. It normally takes from a week to 10 days for a dust cloud to reach the Midwest from the Pacific test area, but this one may have been on its second trip around the world.

•

Ozone Omnibus: A six-volume "Bibliography of Ozone Technology" will be published by Armour Research Foundation (of Illinois Institute of Technology) over the next three years. Volume I, "Analytical Procedures and Patent Index," is scheduled for publication early in May, is stated to contain the only complete cross-referenced index on ozone patents in existence. The series is being com-

Answer to Lather

NOVEL answer to problems of comparative testing in soap and detergent development are these long-stemmed lather flasks specially made for West Disinfecting Co. (New York). To measure the amount of soap converted into lather, the flask is filled with 100 cc. of soap solution, shaken and returned to the position shown. Difference between the new liquid level and the 100-cc. mark is the volume of solution transformed into lather. Lather persistence may subsequently be timed with a stopwatch.



How to grow old without aging by using Rohm & Haas acrylate and methacrylate monomers

If you've ever seen acrylic resin sheets or water paints based on acrylic emulsions, you probably know how little these products show the effects of age—how remarkably well they resist attack by heat, light, weather, chemicals.

Look at the photograph above. Various samples of plastic products were exposed to ultraviolet light for identical, extended periods. Compare each unexposed sample with its exposed counterpart. Note how little the acrylic material has changed.

The ability of many copolymers containing acrylates or methacrylates to resist aging is superior to that of the corresponding acrylic-free polymers. Copolymers of vinyl chloride and an acrylate, for example, have aging properties superior to polyvinyl chloride.

Among the monomers which will copolymerize readily with acrylates and methacrylates are vinyl acetate, vinylidene chloride, acrylonitrile, butadiene, and styrene. *Write Dept. SP for 38-page booklet.*

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Butyl acrylate	Decyl-octyl methacrylate
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The Beckman Automatic Titrator makes all titrations routine — whether common, tricky or time-consuming. And it performs all of these faster than humanly possible without making a mistake. This automatic device suffers from no human weakness such as weariness or boredom, nor does it ever misjudge an end-point.

Simplicity itself, the operation requires merely the lifting of the sample container, and the Beckman Titrator goes into action. A stirring motor starts and the burette valve opens. A special circuit automatically anticipates the completion of the titration, slows down the addition of titrant, and stops it right at the end-point. The operator then reads and refills the burette, and replaces the sample. THE TITRATOR DOES THE REST! One unit will control as many as four burettes.

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RESEARCH . . . . .

piled under the direction of Clark Thorp, manager of the chemistry and chemical engineering research department at Armour Research Foundation. Volume II will deal with physical and medical properties of ozone. Tentative publication date: November, 1954.

•

Epoxy Intermediate: A new intermediate in the production of epoxy resins is the latest offering of Irvington Varnish and Insulator Division of Minnesota Mining and Manufacturing Co., Irvington, N.J. Tradenamed Cardolite 6463, the product is a phenol, containing a 15-carbon substituted straight chain in the meta-position. Molecular weight: 410, nearly twice that of the usual bisphenol. According to Irvington, Cardolite 6463 requires about half the quantity of epichlorhydrin normally used in the preparation of epoxies, imparts greater flexibility to the cured resin.

•

New Nitrile: Monsanto's organic chemical division is offering pilot plant quantities of succinonitrile. Highly reactive, the compound undergoes typical reactions of the nitrile group, is readily reduced (in high yields) to pyrrolidine. Liquid-phase chlorination of succinonitrile produces unsaturated chlorinated nitriles. Monsanto's product assays at better than 99%, is a colorless, waxy solid that is only slightly soluble in water, benzene, and ethanol but soluble in acetone, chloroform, and dioxane. Specific gravity at 60 C is 0.98.

•

H-Battery: A new battery developed by Alexander Thomas, Tracerlab nuclear physicist, uses radioactive tritium as a source of initial power. Here's how: a cylinder smaller than a flashlight battery is filled with the radioactive medium; metal plates, having different surface electrical characteristics, are immersed in the tritium, generate external current, which gradually declines at a known rate. Proposed applications: in hearing aids, survey instruments for measuring radiation, electrical fuses, and trigger alarm devices. An important feature of the new battery, according to the inventor, is that there is practically no danger associated with the use of the tritium isotope. Tracerlab atomic batteries of this type, developed for the U.S. Signal Corps, provide up to 400 volts at 0.01 to 1.0 microwatts of power, have a useful life of from 10 to 30 years, depending on the design.

•

Cobalt Ouster: A new method of preparing cobalt-free nickel chloride is credited to chemists of National Bu-

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20° Baumé Commercial Grade Muriatic Acid is also available for prompt tank car shipments from Carlsbad, New Mexico.

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Wherever there are large batches of chemicals for finishing-baking, curing, aging, dehydrating or preheating—the Despatch No. V-39 is the answer. Big pay load capacity. Takes a truck loaded with a dozen or more pans 48" long, 34" wide on 4" centers. Specially arranged horizontal ducts provide a uniform, high volume blast of air over and under each pan for thorough drying. The No. 1 time control exhaust system controls the air intake on the oven so that there is 500 CFM exhaust at 500° F. with the air intake wide open, and 150 CFM exhaust at 500° F.—after the time control system has actuated shutting off the air intake. Overall size 68" x 8' 8".

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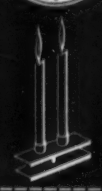
A New Light on Stearic Acid

CENTURY BRAND



Candles burn cleaner when made with a Stearic Acid of low ash content. Century Brand Stearic has the lowest ash content of any on the market today. Careful selection of raw materials and care in processing make Century Brand Stearic Acid the best for candles.

Stearic Acid Esters are whiter when made with Century Brand Stearic Acids because of their exceptional heat stability. Glycerol Monostearates with colors of 5 Yellow and 1.0 Red (5¼" Lovibond) have been produced with Century 1220 Double Pressed Stearic Acid without bleaching.

Cosmetic creams and lotions stay lighter when made with Century Brand Supra Grade Stearic Acid. An iodine value of less than 1 combined with excellent stability make Century the top Stearic Acid for cosmetics.

For these and other uses there is a grade of Century Brand Stearic Acid to meet your requirements.

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PLANT: DOVER, OHIO
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RESEARCH . . . . . .

reau of Standards. Briefly, the technique comprises repeated precipitation, with hydrogen chloride, of nickel chloride dihydrate from a mixture of acetone and a saturated nickel chloride solution. The product is easily transformed to high-purity nickel.

•

Keeping Tabs: Translations of recent German patent applications in the field of hydrocarbons and derivatives are newly available from Research Information Service (New York).

•

Literature Problems: Research librarians will get all the facts on a spate of literature problems at the Special Libraries Assn., Cincinnati, O., convention, May 16-20. The agenda includes a discussion of methods of organizing and retrieving instrumentation literature.

•

Toxicant Progress: Insects are the target of three new toxicant developments:

• Stauffer Chemical Co. researchers have hit upon a promising new class of insect-killers in the halosulfones. U.S. Patent 2,645,592 covers the use of the 4-bromo, 4-chloro, and 4-fluoro derivatives against plant feeding mites.

• Geigy workers in Basel, Switzerland, have demonstrated the contact insecticidal activity of diethyl 2-isopropyl-4-methyl - 6 - pyrimidylthionophosphate (diazinon). Chronic toxicity is reported to be less than that of DDT.

• In Orlando, Fla., entomologists of U.S. Dept. of Agriculture's research station are pioneering a new approach to the resistance problem in flies. Ordinary sugar is the key to their work. The USDA researchers found that dry sugar, combined with malathion, diazinon and a dialkyl phosphate, slashed fly populations by 90% in four hours. Tests were carried out with the aid of a perforated-lid jar, baited with the sugar-insecticide mixture.

•

In the Swim: Look for the imminent entry of Sandoz Pharmaceuticals into the synthetic alkaloid picture (*CW, Feb. 27*). Sandoz has just put an atropine synthesis on stream in Basel, Switzerland, expects to market the product in the near future.

•

Add Eleven: The catalog of Eastman organic chemicals is now bigger by 11. Among the newcomers: squalene; 1,2-*bis*(2-methoxyethoxy)ethane; *n*-butylamine hydrochloride; 4-picoline; phenyl selenide; (*p*-chlorophenyl) acetonitrile; *n*-propyl nitrate.

How Dowicide Preservatives solved bacteria problem for paint industry

Added to water-based latex paints, Dowicide Preservatives prevent bacteria breakdown of protein and extend paint shelf life

DOWICIDE PRESERVATIVES *made this difference. Latex paint control sample (left) was exposed for 20 days at room temperature (70°-75°F.). Bacteria attack caused the paint to "separate out"—and bad odors to develop. The protein lost its suspending powers and the pigment settled out. Test sample with Dowicide Preservatives added (right) was exposed to the identical conditions. Damaging bacterial action was prevented—protein was not degraded, pigment stayed in suspension.*

Dealers' investment is protected during long periods of paint storage. Dowicide Preservatives maintain the easy-to-prepare and easy-to-mix characteristics that make latex paints so popular with the increasing "do-it-yourself" market.

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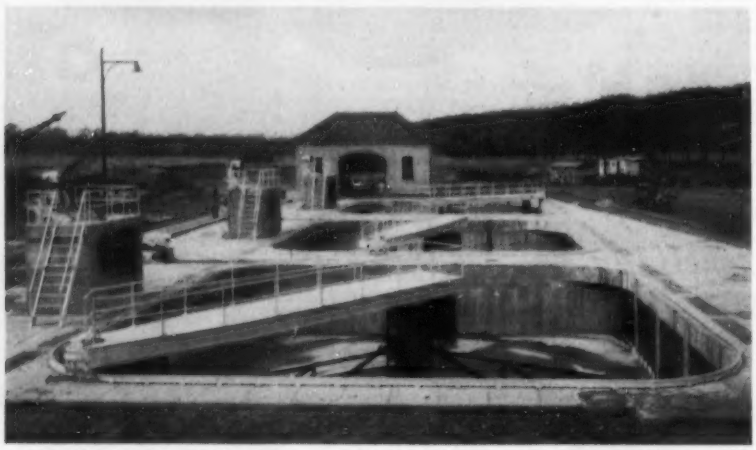

DISPOSAL PLANT: Where biocatalytic agents help in sewage removal.

Profits Down the Drain

Biocatalytic products for cleaning drains, grease traps, and for increasing efficiency of sewage disposal plants have mushroomed in number in the past three years.

Looming as possible competitors for caustic-based home drain cleaners, they're being pushed now for industrial and municipal plants.

Efficacy of the products is still questioned by many—but field and lab tests should settle the debate soon.

Admitting to no great concern, makers of caustic drain cleaners nevertheless have more than casual interest in a survey being tabulated in California this week.

It's a survey by Cal. Tech's Jack McKee of the results Western municipalities have had with biocatalytic agents (bacteria, enzymes) in promoting sewage plant efficiency. It could do a lot toward establishing the agents in public favor—and acceptance by cities could well mean that similar products will soon be strongly promoted for home use.

There's no question but that the home market would be the biggest outlet for such drain and septic tank aids—a market that is swelling rapidly with the increasing suburbanization in the U.S. It's an estimated $5.5 million/year market, which is now served to a great extent by the caustic drain cleaners.

Natural Approach: For city sewage disposal plants, the agents are offered as a means of boosting digester capacity, clearing collection and outfall pipes and keeping lines unclogged.

Hotels, hospitals, and similar institutions have received almost as assiduous attention from salesmen; the biocatalysts are suggested for grease traps and drains.

These products are, in essence, concentrated forms of bacteria and the bacteria products, enzymes—proteolytic, amylolytic, and lipolytic for proteins, starches and fats—suitable for digestion of wastes. They are found naturally in most sewage; some evidence indicates they should be added to certain systems to start decomposition or to maintain it.

For the most part these products are made by controlled decomposition of certain waste materials—principally from animal and fish sources—with the help of moulds, fungi, and bacteria cultures. In some cases these products are supplemented by yeasts and enzymes produced by commercial firms—breweries, packing houses, and the like. Such material, dried and powdered and packaged, is an inoffensive-smelling mixture with considerable storage life.

Home or Plant: A number of these agents are on the market now (introduced some three or four years ago), many available in packages for both industrial and home use. Typical are Bionetic, made by Reliance Chemicals Corp. (Houston, Tex.); Sea-Cal and Sea-Chem, made by Chemical Research Products Inc. (Wilmington, Calif.) and sold by Saxon Enterprises, Inc. (Los Angeles); Fermex and FX-7, both liquid-form bacteria products, made by Fermex Co. (Newark, N. J.), Rid-X, d-Con Co., Inc. (Chicago).

Prices vary, but most are available to cities at about $3-$5/lb. Some of them for home and institutional use are as much as $7.50/lb., others are as low as $1/lb. Packaging and concentration influence the price.

Very acidic or basic line conditions are said to limit the use of the biocatalysts, since they can destroy biocatalysts before they are able to act. Use with a caustic drain cleaner thus results in little or no action.

And just how effective they are is apparently still a matter of considerable disagreement. Many sanitary engineers have come out flatly against them; still others feel they have merit. Laboratory tests with them so far have been fairly inconclusive, but research

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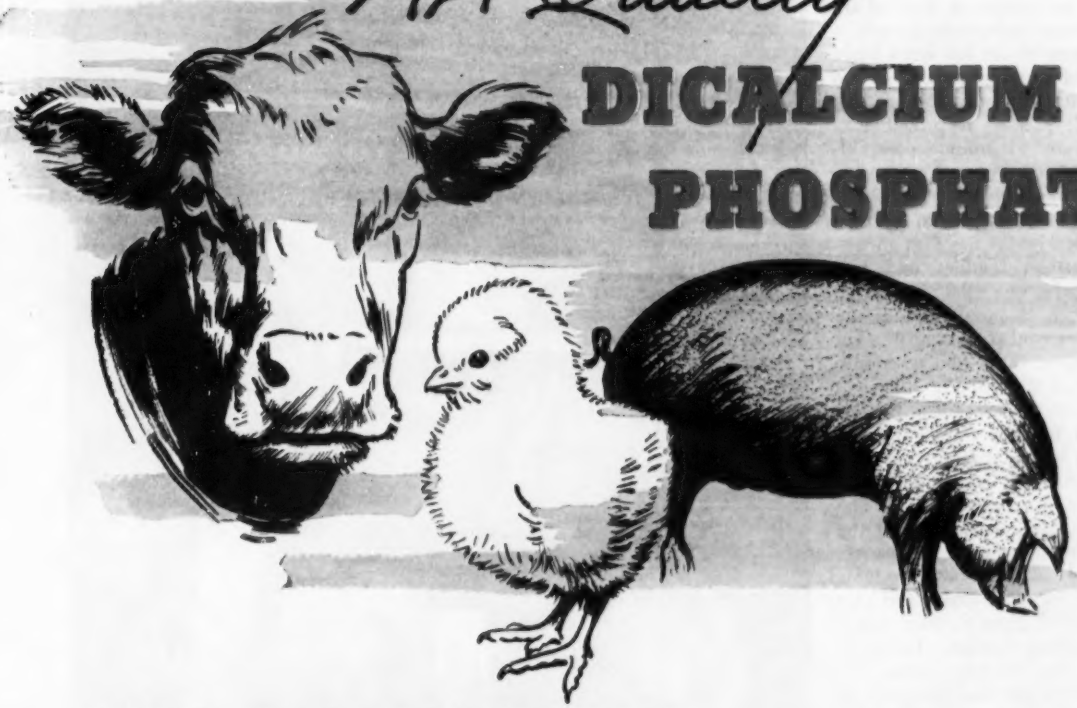

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is still going on; makers of Sea-Cal are sponsoring some independent work.

And business so far has been fairly small; one of the top factors in the field estimates that business at the distributor level now is probably in the vicinity of $1 million/year, although he's predicting vast expansion within a couple of years.

Suburban Shift: Much of his optimism is based on the increasing number of suburban families and two concomitant factors: the increasing load on sewage disposal units in the suburban area, and the rising number of private septic tanks and cesspools.

Indicative of the gaining suburban population are recent census figures. They reveal that in the 10 largest metropolitan areas, the outlying area population gain has been almost 2½ times that of the central city. (The figures show, too, that although the suburban growth has been impressive, it isn't simply due to city residents moving out. In most cases, the city has grown, although at a slower rate.)

In many cases, this suburban shift has thrown an entirely unforeseen load on the sewage disposal units of the new areas. Often new units must be built; other towns are trying to raise the capacity of their plants with the biocatalytic agents.

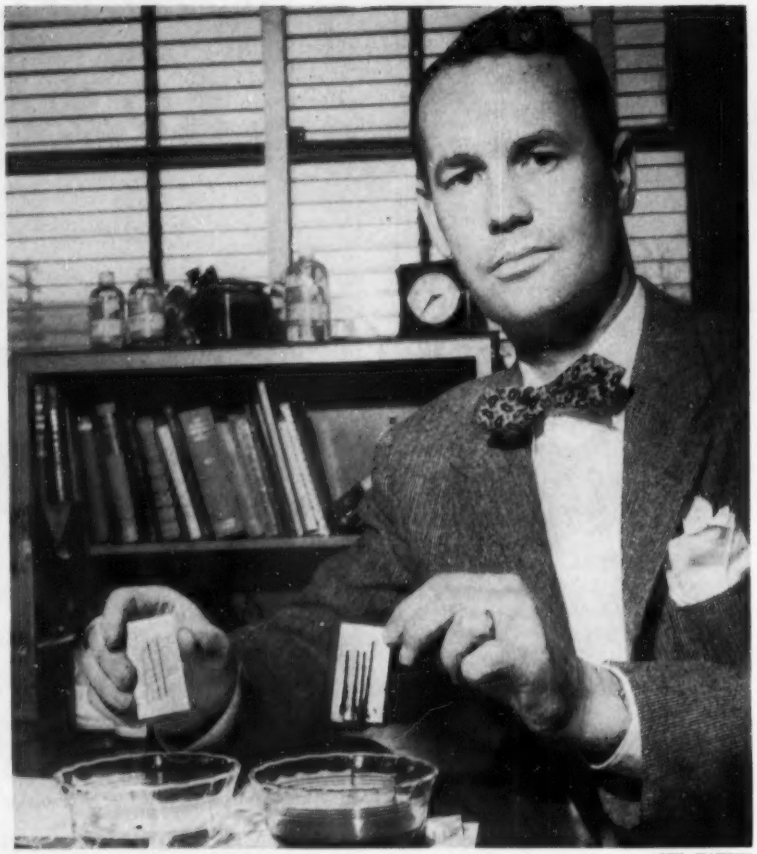
In many other cases sewage disposal is by means of individual disposal systems.

Typical of these is giant Levittown on Long Island. Porous soil conditions of the area have permitted installation of septic tanks for each home. The Levittown in Pennsylvania, however, located in an area of clayey soil, has a municipally operated sewage disposal plant.

These, then, are the targets biocatalytic agent producers have in their sights. They're targets far greater than those available to marketers of conventional drain cleaners. Makers of the latter would have their greatest worry if biocatalytic agents become "first thought" items in the homeowner's mind.

To get the biocatalytic agents familiar to householders, however, will likely require a considerable advertising campaign. It's probably out of the reach of most producers right now.

In the meantime, they'll promote their products with the largest volume buyers that they can effectively reach. And they explore other angles: disposal of industrial vegetable wastes (sugar beet production, for example, has a pressing disposal problem), or waste removal on shipboard—the agents can be used to eliminate refuse that might leave a telltale greasy trail.



LYN CRAWFORD

TECT'S PATRICK: A small percentage of additive opens a bigger TCE market.

Payoff in Stability

Nobody's ever denied that methylchloroform (1,1,1-trichloroethane, or TCE) has a number of features that make it look good as a degreasing solvent—it's fast-drying, nonflammable, low in toxicity, competitively priced. But there's also no denying that it's corrosive effect on aluminum has restricted its use.

Newest firm to come up with an inhibited TCE is Tect, Inc. (Dumont, N.J.), which introduced its Vythene last week. Claimed to make the TCE noncorrosive to aluminum (and copper and brass) even at boiling temperatures, the still-secret inhibitor won't boil out, and, Tect says, doesn't raise the toxicity of the relatively low-hazard TCE.*

Prime target of Vythene, Tect's sales manager Jay Patrick says, will be some of the markets currently held by carbon tetrachloride—3-4 million lbs./month are used in operations where Vythene could well substitute.

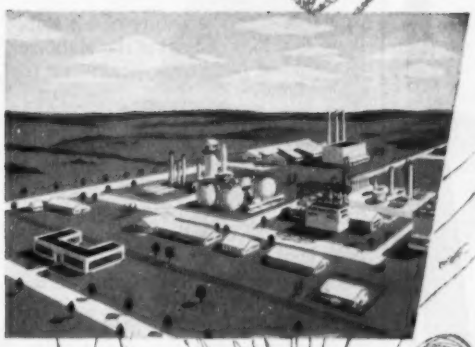
But it will face tough rivalry with other methylchloroform products like Burton Marine Co.'s (New York) Electrosol 170 and Penetone Co.'s (Tenefly, N. J.) Inhibisol, as well as the other so-called safety solvents such as those turned out by Fine Organics, Inc. (New York), Brulin & Co. Inc. (Indianapolis), and John B. Moore Corp. (Nutley, N.J.), among others.

Vythene is, at $2.35/gal., well below the price of several other treated TCE's, but roughly 80¢/gal. above carbon tet. Tect hopes to bring the price below $2/gal. eventually, closer to the price of Dow Chemical Co.'s basic product.

Helping Hand: Dow is checking the product, in which it has a close interest as sole producer. Stable TCE could help sales, so Dow is lending Tect a hand by warehousing the Vythene in its facilities in Chicago, Midland, So. Charleston, W. Va., and Pittsburg, Calif.

Until patents come through, Patrick

* American Conference of Governmental Industrial Hygienists rate the toxicity of methylchloroform at 500 ppm. Carbon tetrachloride has a 50 ppm. rating; both are noncombustible. Tect says its inhibited TCE has no more toxicity than plain TCE.



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isn't revealing the nature of his stabilizer. He does deny that the stabilizer is anything like triethylamine or triethanolamine.

Patrick isn't secretive about what the stabilizer does for Vythene. It's big job is making the TCE inert to aluminum. And stabilized Vythene is said to be safe with electronic equipment and electrical insulating materials, leave little or no residue, and act as a vapor depressant in certain aerosol applications.

Tect has a product with impressive qualities; whether it can nab a big share of the market as a carbon tet replacement remains to be seen.

Good and Bad News

Not all the news to come out of the recent annual spring meeting of the National Agricultural Chemicals Assn. at Houston was cheerful. A main speaker, Texas Agriculture Commissioner John C. White, used the occasion to announce that from that time on the herbicide 2,4-D will be banned in seven Coastal Bend counties.

The action was the outgrowth of complaints from cotton farmers that their crops had suffered damage when the airplane-sprayed herbicide was used on nearby rice fields. This is the first time the Texas Dept. of Agriculture has invoked its power to outlaw a broad-leaf plant killer.

Instead of 2,4-D, White recommended the use of 2,4,5-T, which is said to be five to ten times less damaging to cotton. A second part of the new regulation concerns the use of airplanes in spraying. Aerial spraying of any type of herbicide is prohibited in the Stafford-Missouri area where cotton and rice fields are closely intermingled.

Brighter Side: On the brighter side were the remarks of NACA President Paul Mayfield, general manager of Hercules Powder Co.'s naval stores department. Emphasizing the benefits resulting from the increased use of agricultural chemicals, he said that since 1945 the yield per acre of potatoes has gone up 65%, of onions 49%, celery 52%. He added that, on the average, cattle are 50 lbs. heavier and apple trees properly treated now give 11 bu. each as opposed to 2 bu. per tree without treatment.

On insecticide laws, he pointed out that "your association and the industry have gone on record for the second time in six months for the endorsement of [federal] legislation in the public interest." He referred to the Miller bill (H.R.7125), which would limit the

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quantity of residues of insecticides and other farm chemicals on raw agricultural products.

Dr. F. C. Bishopp, coordinator for the Federal-State Pink Bollworm Research Center at Brownsville, Tex., asserted that the total chemical control of crop disease in the U.S. would save $2.8 billion or about 7% of potential production of all farm and forest products. He said such control, by keeping land from being denuded, would also help prevent erosion.

USDA'S HALL: Burned midnight oil.

War Historian

To commemorate the centennial of professional entomology in this country, the Dept. of Agriculture has just published an "Insect Facts" kit. A letter accompanying the literature points out that "without our entomologists this nation could not be one of the best fed, clothed and housed on earth."

It explains that people in general don't realize what would happen if man's war on insects suddenly stopped: in a month's time every fifth person in a major city would be mortally ill with plague or yellow fever; and it wouldn't be long before average production per acre would be cut in half.

Even today insects take more of the production of our soils than man, the literature explains. One purpose of "Insect Facts": ". . . to alert the American people to the need for a ceaseless watch on the insect world and a continuous search for newer and better control methods." To achieve this, the kit has been sent to state experiment stations, radio farm directors, editors of magazines and newspapers.

Cooperation by Companies: Of the 2,000 kits, about one-fourth went to insecticide and other chemical manufacturing firms that shared in financing the idea—helping out USDA, which had no funds for such a project. Contributions varied from $50 to $500. Coordinating cooperation by the companies, which also supplied information of all kinds, was Montgomery Budd, Hercules Powder Co.'s advertising director. He reports that more copies of the kit will probably be printed, will sell for $5 each.

Chief credit for the project belongs to David Hall, publications head of USDA's agricultural research service information. As chairman of the Centennial Commemoration Committee, he spent extra hours at night for several years gathering and organizing the information.

The kit is divided into three sections: general information, news and features, and visuals. Among things noted: one pair of houseflies and their progeny, if all survived, could produce 191 quintillion flies in a single season.

More meaningful to farmers are the various charts, which illustrate how production for specific crops skyrocketed following the introduction of new insecticides. The charts reveal that most of these came on the market during the 1940's.

Products None Wants

The pharmaceutical industry must work hand in glove with practicing pharmacists to allay public resentment of the current cost of medicines.
This was keynoted in the speech of Michael Charley, outgoing president of the American Pharmaceutical Manufacturers' Assn., at its annual meeting in Boca Raton, Fla. Whatever action APMA takes along these lines will be directed by Robert Hardt, vice-president and director of Hoffmann-LaRoche, Inc., who will serve as association head for '54.

Erroneous Impression: "The public," Charley explained, "has unfortunately formed the erroneous impression that prescription prices are too high." He disagreed with this, contending, "The biggest bargain dollar the public can spend is the prescription dollar."

Heart of the trouble, he said, lies in the fact that ". . . the retail pharmacist directly and we as manufacturers indirectly are placed in the unfortunate position of selling something the customer didn't want to buy in the first place."

The answer, according to Charley,

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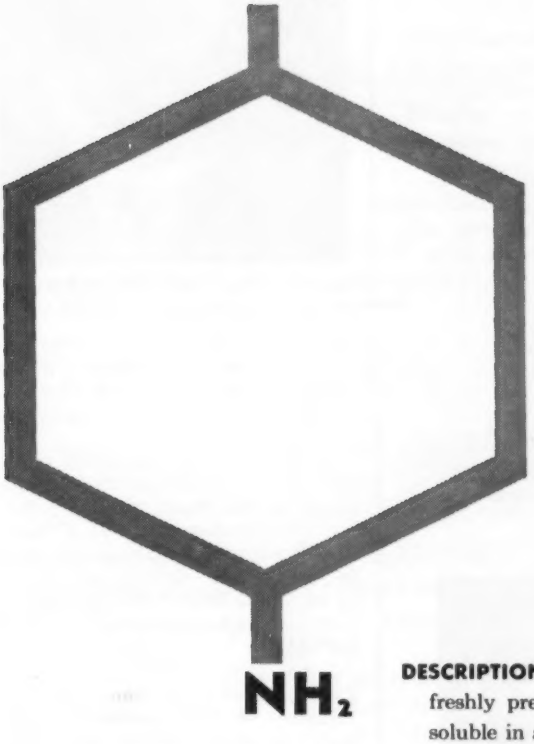

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SPECIALTIES . . . . .

HOFFMAN-LA ROCHE'S HARDT:
He inherits problems.

who is head of Standard Pharmacal Co., is "to find some method of public education that will bring about a better understanding of prescription costs."

In his speech he also called attention to the "Pause in the Miracle Climb of the Pharmaceutical Industry" (CW REPORT, *Jan.* 9). Charley said he was confident the pause would be "a short one." He urged companies to take advantage of the interlude to examine and improve their marketing methods.

•

Parting Agent: Garan Chemical Corp. (Gardena, Calif.) now sells a new mold release product for epoxy resins. It's tradenamed Mold Release 225, is said not to discolor, react, or inhibit the cure resins. It comes ready to use.

•

Bulletins: Here are three of the latest:

• Chemical Specialties Research Laboratories (New York): the new 1954 bulletin, listing over 500 chemical specialties on which chemical analysis are offered.

• American Polymer Co., chemical division of The Borden Co.: "Polymers for Textiles," a new brochure that covers the Polyco emulsion polymers available to the textile industry.

• Monsanto Chemical Co.: a technical bulletin describing the formulation and application of Chloro-IPC. It lists weeds controlled by the herbicide and those resistant to it.

•

Phenolic Plastic: Bakelite Co., division of Union Carbide and Carbon Corp., has developed a new fast-curing phenolic plastic called BMG-5000. It

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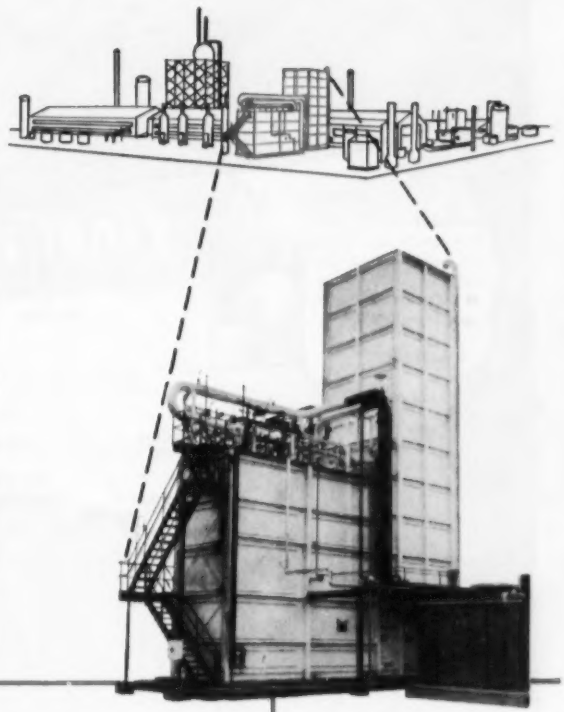

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. . . through planning, process design, fabrication, erection, start-up, and on through the years of operation.

Integrated Engineering-Manufacturing Service

Engineering staff at the scene of manufacture. Allows best transposition of engineering skill into completed apparatus.

Specialists in Low-Temperature Processing

Air Products has designed and built over 600 low-temperature plants for gas separation. Trouble-free progress from planning to start-up.

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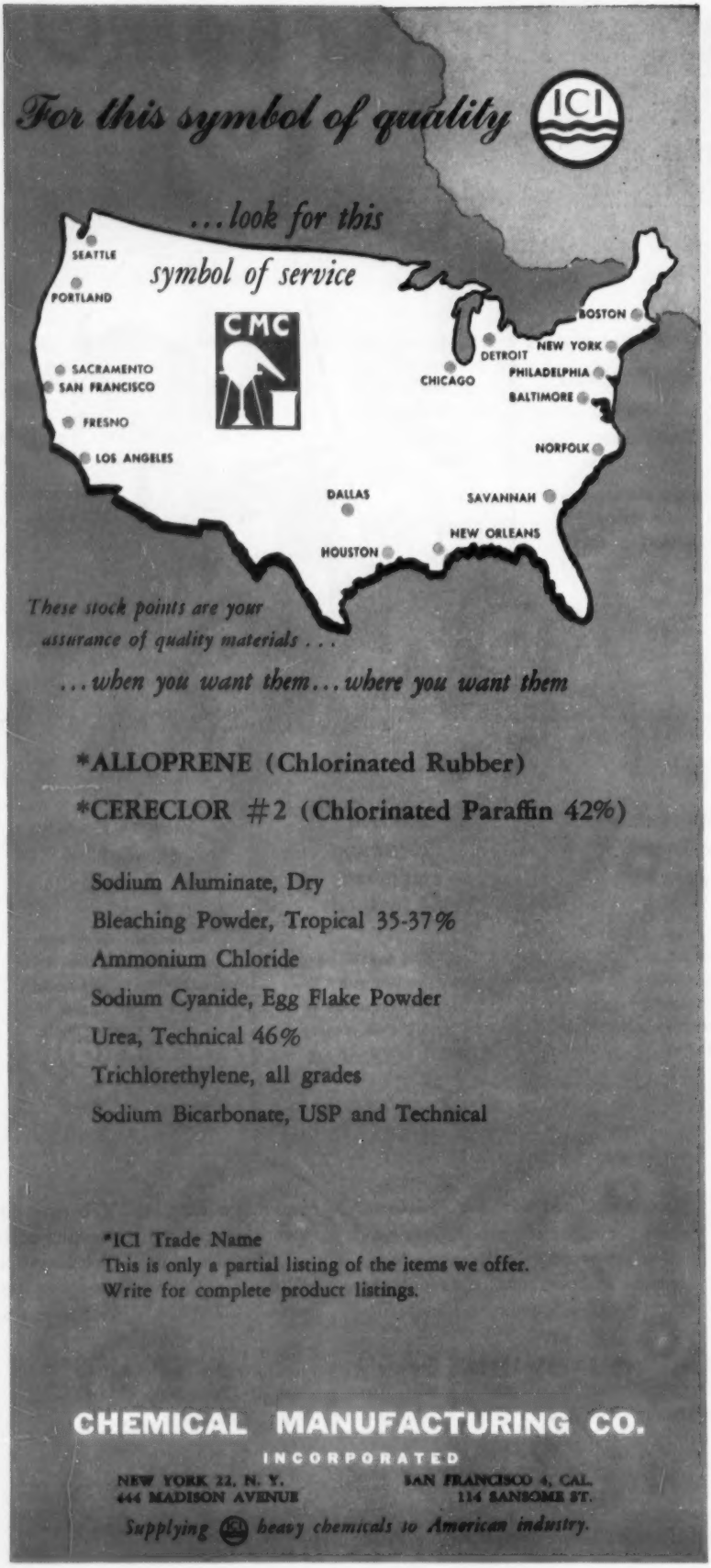

SPECIALTIES . . . . .

is said to allow longer preheating at higher temperatures and to fill out molds at lower pressures than other general-purpose phenolic molding plastics.

•

Final Finish: Satinwood Rez, a low-luster, final finish for color-toned, natural or blonded wood surfaces, has been introduced by Monsanto Chemical Co.'s merchandising division. According to its maker, it may also be used as a refinishing coat to renew faded finishes, accent color and grain qualities.

•

Dairy Cleaner: Pennsylvania Salt Manufacturing Co. has brought out Raydex, a granular alkaline formulation cleaner for dairy and food processing plants and equipment. It is said to contain no inert material, filler or water. It's applicable in hard or soft water by brush or spray method.

•

Anti-Oxidant: Shell Chemical Corp. has a new anti-oxidant for food and drug products. Called Ionol-CP, it's 2,6-di-*tert*-butyl-4-methylphenol. Uses: in preventing rancidity of fats and shortenings, in protecting certain vitamins from air, in stabilizing rubber and plastic compositions used in food handling equipment.

•

Distinctive Color: Standard Oil Co. of Indiana has added a distinctive purple color to its new Red Crown gasoline.

•

All for Sweets: Bristol Myers Co., maker of Ipana toothpaste, has launched a campaign to counteract statements that the eating of sweets may cause tooth cavities. Current Ipana advertisements recommend that people eat the sweets they want and protect their teeth against cavities by brushing them regularly. The campaign seems to tie in closely with that of associated sugar producers.

•

Water Distiller: A new device for changing ordinary tap water into the chemical equivalent of triple-distilled water has been developed by Central Scientific Co. (Chicago). The device is called Quikpure, is comprised of a 16-oz. polyethylene squeeze bottle, the bottom which contains a mixture of cation- and anion-exchange resins. Tap water is converted into distilled water in about one minute, the company claims. Cost per bottle: $2.50.

•

Laundry Pair: Lever Brothers is introducing two new improved forms of its Rinso washing product. Rinso soap is "richer by 23%" and Rinso detergent is now colored light blue. Both

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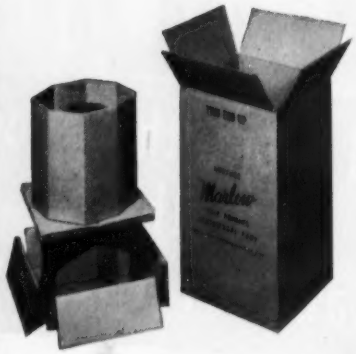

PROMINENT
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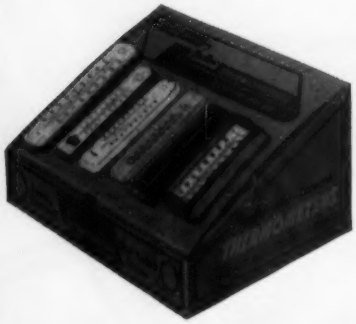
SALES-WINNING
PROMOTION



Write for booklet, "How To Merchandise With Corrugated Boxes." Hinde & Dauch, Sandusky 33, Ohio.

HINDE & DAUCH
Authority on Packaging

SPECIALTIES . . . . .

forms will be available in special sales throughout the country.

•

Summer Opening: Sieberling Rubber Co. will open a one-story plant at Newcomerstown, O., this summer where it will make a nonrigid plastic footwear material and a rigid plastic called Seilon. The footwear material will serve as a leather substitute in luggage and other leather goods. J. P. Seiberling, president, says his company will not become a chemical manufacturer but will buy raw materials from firms that specialize in them.

•

Plastic Toppings: U.S. Rubber Co. has introduced two new patterns in Naugatop, its plastic topping material. The grass design comes in four colors, the pebble design in another four.

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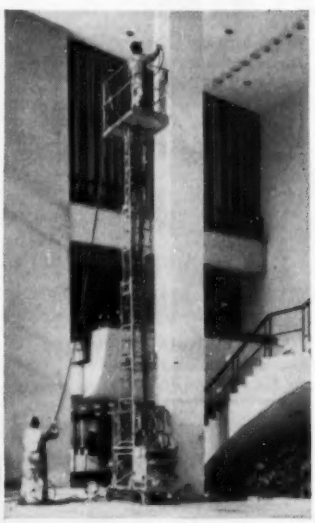
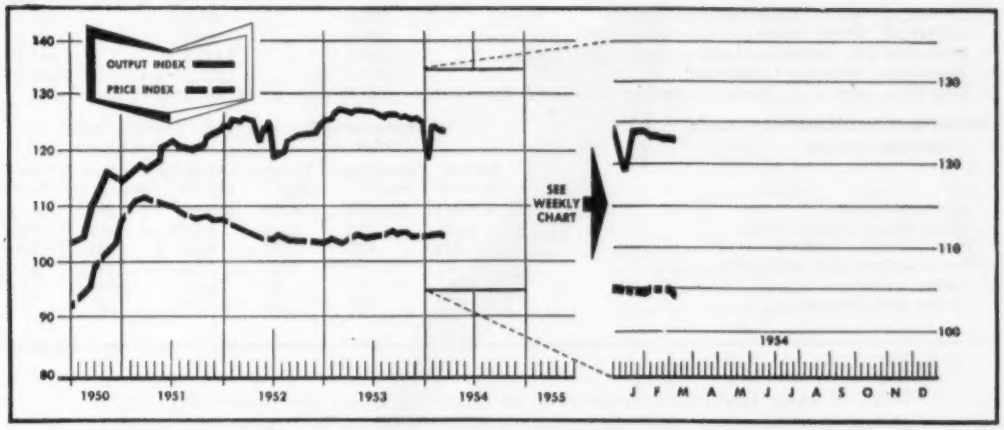
New Filter Cloth: National Filter Media Corp. (New Haven, Conn.) now markets a filter cloth woven from Du Pont Dacron. It is said to have excellent resistance to both acid and caustic attack at room temperature.



Substitute for Paint

A 42-ft. column in the lobby of the U.N. General Assembly building gets "plastisprayed" by Progressive Industries, Inc. (Long Island City, N.Y.). Unlike a paint spraying operation, the technique of applying the vinyl plastic requires no drop cloths for protection, no respiratory masks. Coating costs 45¢/sq. ft.; UN is spraying 39 columns.



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

On the surface, chemical market conditions appear to be serene this week. But instances of swirling undercurrents of competition pop up here and there to alert attention of hard-pushing salesmen.

At the moment, for example, competitive forces are strong enough to officially alter some plasticizer prices. Actually, there has been some wavering in prices for some time.

That goes for di-octyl phthalate (DOP) and di-iso-octyl phthalate (DIOP), among others. By week's end most producers' tags will read 2¢/lb. lower; both will be pegged at 32¢/lb. in bulk quantities.

•

As can be expected, the reductions set off a chain reaction of plasticizer price changes; for when DOP moves, the others usually follow. Effective this week dicapryl phthalate is sporting a new 31¢/lb. price—down 1¢ from last week.

Although the traditional price spread between dicap and DOP is 2¢, it seems less than likely the former will be pressured any further. Reason: manufacturing cost-profit margin, says one dicapryl maker, is squeezed too tightly now. Supply/demand, however, could be an outweighing factor.

•

Further pointing up the unsettled trend of the plasticizer market are this week's lowered prices on some sebacates and adipates. Di-octyl and di-ios-octyle sebacates—hammered by the sharp 5¢/lb. decline in sebacic acid—are down about 2½¢/lb. Also scheduled for lower prices: dibutyl sebacate (off 3¢/lb.); dihexyl sebacate, (down 3¢).

Di-octyl and di-iso-octyl adipates are currently carrying a new 43½¢/lb. price (in tanks).

•

And price reductions "to meet the competition" are also being made by some polyester resin producers. The cuts take on a delayed-action tint since a multisplit market has been in effect for at least four months (CW Market Letter, Jan. 9).

Customers of one major maker have just been notified of changes

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	123.2	123.3	126.6
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.3	104.2	104.6
Bituminous Coal Production (daily average, 1,000 tons)	1,106.0	1,112.0	1,346.0
Steel Ingot Production (1,000 tons)	1,604.0 (est.)	1,622.0 (act.)	2,228.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	285.7	280.8	252.1

MONTHLY INDICATORS—Trade (Million Dollars)	Manufacturers' Sales			Manufacturers' Inventories		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Year
All Manufacturing	$23,643	$23,864	$24,724	$46,069	$46,388	$44,581
Chemicals and allied products	1,605	1,569	1,634	3,066	3,067	2,910
Paper and allied products	675	680	690	1,055	1,034	1,058
Petroleum and coal products	2,142	2,149	2,042	2,738	2,697	2,611
Textile products	1,031	992	1,128	2,458	2,464	2,612
Leather and products	271	259	266	568	581	528

that, in some instances, amount to as much as 5¢/lb. The move thus establishes most general purpose polyester resins nearer the 35-36¢/lb. range—substantially off from the approximately 40¢ prevailing last winter.

Big question: What will those producers who have been selling under the so-called market level do now? The answer may be forthcoming within the next couple of weeks.

•

And sometime within the month the government and private industry will get together to sign contracts that will boost U. S. titanium output. Word out of Washington last week reveals that Du Pont, Electro Met (division of Union Carbide), and Dow will contribute an additional 18,800 tons to the production capacity already in place or planned (CW, Jan. 2; Apr. 3).

ODM and GSA officials are also in the preliminary talking stage with several other companies for possible additional titanium producing facilities. It's all part of the government's program of expanding titanium production as rapidly as military requirements might dictate.

•

Out of Washington, too, this week, will come another end use breakdown from the Business & Defense Services Administration. Latest is for toluene. (First was benzene, CW, Jan. 2; second, sulfuric, CW, Feb. 27).

Here are the salient consumption figures (in thousand gallons) on toluene:

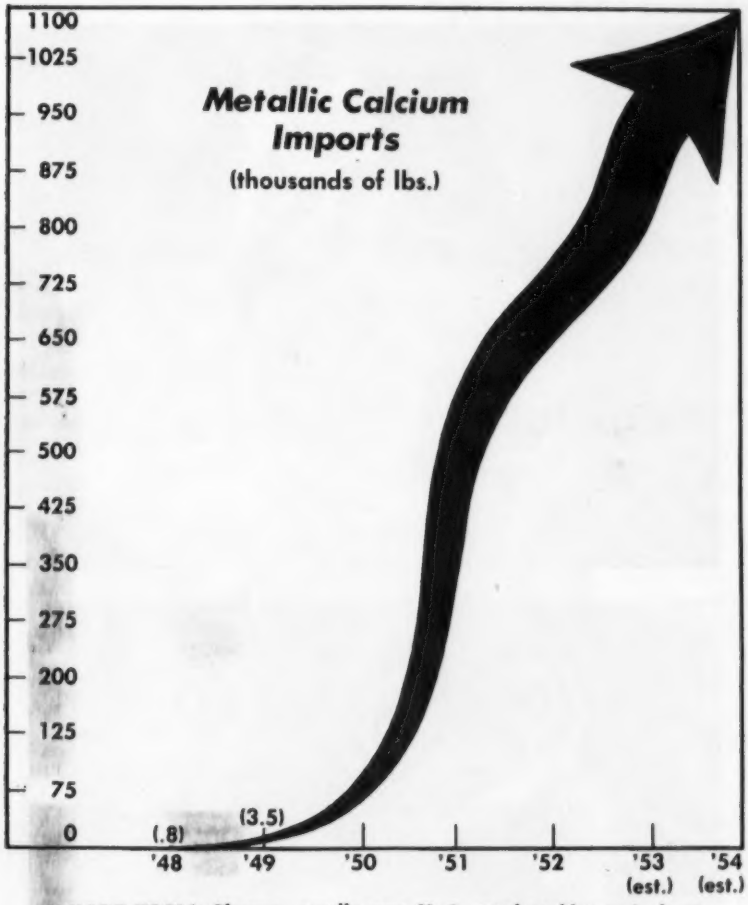
	1950	1951	1952
Total consumption	76,032	94,692	95,460
Aviation gasoline	27,996	35,827	40,169
Explosives	722	6,700	24,496
Chemical synthesis	13,975	18,629	17,161
Protective coatings and solvents	28,246	27,817	8,957
Medicines and pharmaceuticals	1,232	1,860	1,684
Rubber derivatives	1,414	1,390	1,404
Petroleum refining	547	623	635
Dyes	852	813	630
Misc.	1,048	1,033	333

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending April 12 1954

DOWN

	Change	New Price		Change	New Price
Dioctyl adipate, tanks, works	$ .0125	$ .435	Phthalates, tanks.		
Sebacic acid, c.l.,			Dioctyl, frt. alld.	.02	.32
purified	.05	.64	Diisooctyl, dlvd.	.02	.32
C.P.	.05	.72	Dicapryl, dlvd.	.01	.31

All prices per pound unless quantity is stated.



IMPORT ZOOM: Cheaper, equally pure U. S. metal could turn it down.

No Free-Flow for Calcium

Not often does foreign production push the U.S. out of a market—especially with the apparent tacit approval of domestic makers—but that's exactly what's happened in the field of metallic calcium.

At the moment, a Canadian company, Dominion Magnesium, Ltd., (near Ottawa) is, in effect, the prime calcium supplier to the world. And the U.S. is probably its top customer. It's an axiom of the marketplace that a chemical product, to garner attention from producers and consumers, must have a fair beginning, a substantial present, an optimistic future—and at a profit.

But calcium metal, though not fulfilling all requisites, continues to pique interest of many marketers. For the material has had a terrific past, could very well wrap up a capacious future—yet can be described as having no significant present. At least for any U.S. producer.

Right now, only one company, New England Lime (through its subsidiary Nelco Metals, Inc., at Canaan, Conn.), contributes a relatively small amount to domestic consumers. Practically all U.S. requirements—which this year may hit over 1.1 million lbs.—are being filled by Dominion.

Up, Down, Nearly Out: On the surface, metallic calcium's rise, fall and—lately—resurgence, looks fantastic. For instance, prior to 1939, the domestic market was fully satisfied with the importation from France of a pocketful 22 tons/year. By the end of World War II, however, output had skyrocketed to 5 or 6 million lbs., perhaps more. A scant five years later U.S. production of calcium had just about petered out.

The following data bear no official stamp (it's well-nigh impossible to pinpoint wartime figures), but a look at the fortunes of the two one-time, big-time, domestic producers underscores calcium's ebb and flow.

• The Electro Metallurgical Co. (division of Union Carbide and Carbon), pioneered U.S. production in 1939. Output in three years hit a 300,000 lbs./year clip; more than doubled during the war years and immediately after (1942 through 1946). The skid began in 1947, when production dropped to about 100,000 lbs., continued the downward trend in '48 (to 60,000 lbs.); to 35,000 lbs./year in '49 and '50. And finally, in 1951, operations were suspended. They have not as yet been resumed.

Currently, Electromet, using Canadian calcium—last year some 80,000 lbs. worth—recasts and distills, makes the material available to its customers in two grades: regular (analyzing 98% calcium) and distilled (a pure 99.5%).

• New England Lime eased into calcium metal production in 1944 with a government-owned plant that, during the critical years, was reportedly turning out some 4½-5 million lbs./year. When the government's requirements collapsed in 1947, output

ABORTIVE JUMP: From lathe turnings-size to crystalline powder.

plopped to a low 40,000 lbs. And the plant— as far as calcium was concerned—was out of the picture completely during the next three years.

Currently, Nelco may be producing between 15,000 and 25,000 lbs./year; bulk of it is the only domestic material on the open market. The Atomic Energy Commission, which in a sense inherited the Canaan works, dips into production for dribs and drabs.

Diversification at a Price: Calcium, of course, has a variety of uses, including applications in the chemical industry, in steelmaking, and in the nonferrous metals industry. It has been used as a deoxidizing agent for nonferrous metals; as a deoxidizer, sulfide former, and cleanser for ferrous metals; as a reducing agent for the preparation of metals difficult to reduce; and as an absorbent for oxygen, hydrogen, nitrogen, other gases.

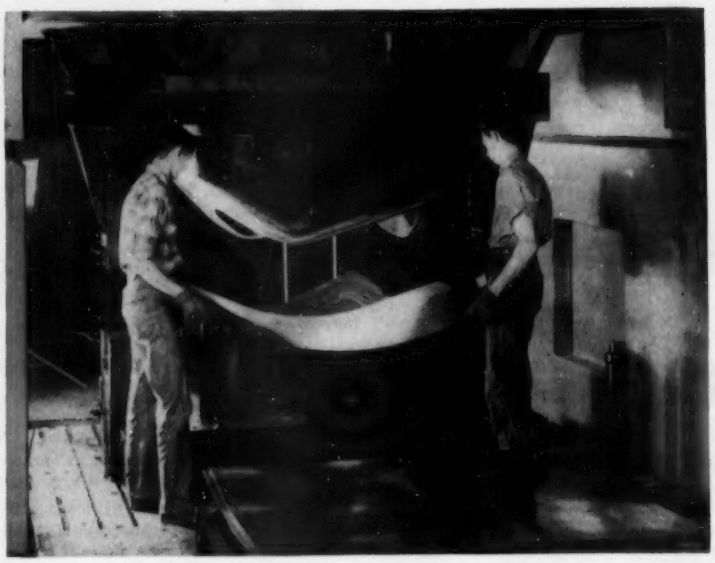
But in the one large potential use —reduction of refractory metals—calcium is elbowed out by other materials—principally magnesium, to a lesser extent, sodium. And the prime nudger is price. For instance, even for the lowest impure ranges (60%-70%), calcium at more than $1/lb., can't compete with sodium at 16½¢ or with magnesium pegged at 27¢/lb.

And for the purer grades of calcium, prices start at about $2, range all the way up to more than $6/lb. for triple-distilled material.

Lower price tag, too, made possible Dominion Mag's beachhead on the American calcium market. It continues to be the reason the Canadian company maintains its prime-producer mantle in the field.

Today, U.S. customers are paying about $1.80 for over-the-border calcium, while domestic sellers are quoting about $2.05/lb. Actually, the reason behind Dominion Mag's lower price is a matter of equipment rather than more ample raw materials or any lower labor market. Both that company and Nelco Metals here produce calcium crowns, but Dominion utilizes its war-spawned furnaces to melt the crowns into a more preferrable "billet" form. There are, right now, no such melting facilities in operation in the U.S.—and the cost to build wouldn't be worth the market.

The U.S. market, however, has been and is a sizable siphoner of Canadian calcium-metal (*see import chart*). Last year, for instance, though no official government figures are available, actual sales to consumers totaled more than 1 million lbs. Here's how that quantity was distributed among U.S. companies:



Assembly-Line Outlet?

You may find lower price tags on sport cars or luxury models and have a greater variety of car styles to choose from, when—and if—a new Chrysler Corp. plastic die gets into auto production lines.

Resin and fiber glass makers, too, may find cause for applause at the opening of another big-time potential outlet for their products.

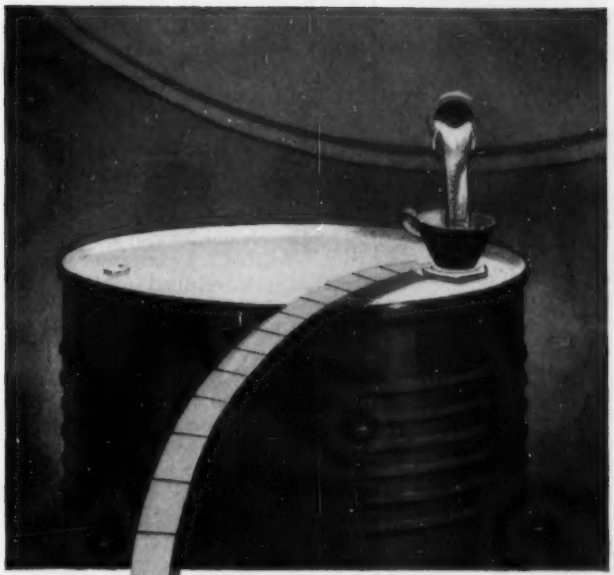
Chrysler's design experts have made the new die from a liquid exothermic plastic. After setting, it withstands pressures of over 20,000 lbs./sq. in. in stamping out steel auto parts. Too, if these dies are dented in a stamping run, they can be repaired easily by a secret "Quickpatch."

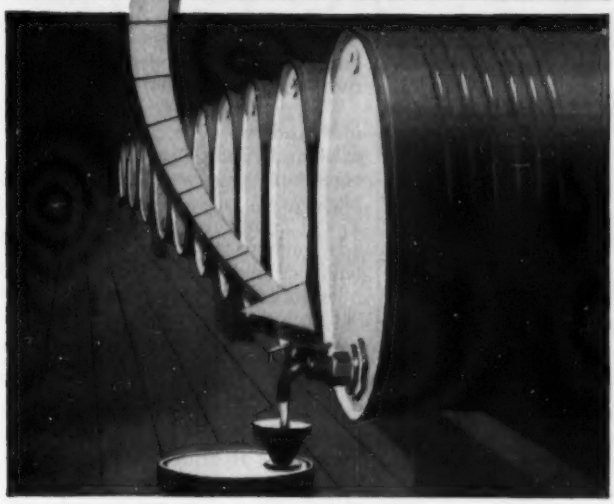
The opportunity for more changes in car styles will stem from the speed with which the new die can be produced.

It's fairly certain from initial tests that these plastic dies will be ideal for short production runs, will see regular use soon.

The outlook for more frequent and cheaper changes in car styles may mean increased auto sales and a goodly boost in the consumption of plastic.

Do you go all the way with quality control?





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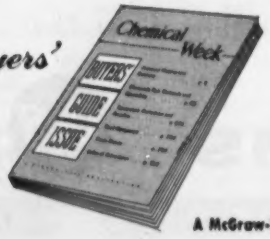

Guide Issue Of . . .

Chemical Week

A McGraw-Hill Publication, McGraw-Hill Building, New York 36, N.Y.

MARKETS . . . . . .

Metal Hydrides	**900,000 lbs.**
Electromet	**80,000**
Alcoa	**21,000**
Foote Mineral	**10,000**
Magnus Metal	**4,000**

In 1952, Metal Hydrides (Beverly, Mass.) purchased some 650,000 lbs. from Dominion. Practically all of the calcium it buys—perhaps 97%—is captively consumed by Metal Hydrides for production of calcium hydride. Principal outlets for the calcium-derived material include uses:

- As a source of hydrogen when reacted with water;
- For production of metals from oxides;
- As a drying agent for gases and organic liquids.

Ballooning Market: During World War II, calcium hydride's convenient and reliable hydrogen-generating characteristic resulted in large-scale military demands.

The Royal Air Force and the U.S. Army Signal Corps consumed most of the calcium hydride for the inflation of meterological and antenna-supporting balloons. The Signal Corps purchases are, even today, large enough to occasionally pinch Metal Hydrides' nonmilitary business; though over the year the government take averages second to the company's other calcium hydride outlets.

Chances are, if the Army were not such a "sporadic" customer, the government would be interested in putting up its own calcium hydride plant.

The production of metals from oxides heads up other major outlets for calcium hydride. Titanium and zirconium metals as well as the hydrides, nitrides, alloys and alloy powders of Ti and Zr and also some special, nowadays-newsworthy items like thorium, tantalum and columbium, may well offer wider maws for calcium use.

Currently, calcium hydride's use as a drying agent for hydrocarbons, alcohols, oils and a host of other compounds and products is a small but growing one; will probably remain so for at least three or four years. By then Metal Hydrides hopes to utilize a development that reacts calcium oxide with magnesium in hydrogen to produce a less expensive calcium hydride. But that isn't slated to happen until present markets are expanded and new ones are developed.

Big Splash, No Swim: A couple of years ago Ethyl Corp. came up with a new form of metallic calcium that almost set the industry on its ear. Its finely-divided, free-flowing crystalline powder was expected to bite deeply into the magnesium and sodium-held markets. For one, it was far more reactive chemically—because

Dependable Source for Chemical Raw Materials

K. V. Coombes, General Purchasing Agent, Brown Co.

"We're determined to lead the parade... and we look to our suppliers to help us"

— K. V. Coombes, General Purchasing Agent, Brown Co.

"ARE WE quality conscious?" asks K. V. Coombes, General Purchasing Agent, Brown Co., Berlin, N.H. "I'll say we are! Purchasing is keenly aware of the challenge of competition. To lead the parade, our paper products have to be the best. That makes top-quality raw materials a must!

"We not only seek out the best sources for the raw materials that we do not make ourselves, but we want to know the vital statistics on our sources: What producing facilities do they have? . . . Do they own or control their own sources of raw material? . . . What steps do they take to insure quality control? . . . Are they research-minded?

"Wyandotte has satisfied our requirements on all these points — even to owning their own sources of supply, limestone quarries, salt deposits, coal mines.

"Their Soda Ash, which we purchase, is always uniform. In the New England territory, their technical representative works very closely with us. We feel, too, that their recent expansion in research can be most helpful to concerns like ours in the years to come."

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Portion of Brown Co. plant, Berlin, New Hampshire.

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How to keep informed on the "with what" part of your business

AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

Each advertiser is obviously doing his level best to give you helpful information. By showing, through the advertising pages, how his product or service can benefit *you* and *your* company, he is taking *his* most efficient way toward a sale.

Add up all the advertisers and you've got a gold mine of current, on-the-job information. Yours for the reading are a wealth of data and facts on the very latest in products, services, tools . . . product developments, materials, processes, methods.

You, too, have a big stake in the advertising pages. Read them regularly, carefully to keep job-informed on the "with what" part of your business.

McGRAW-HILL PUBLICATIONS

of its vastly greater surface—than bulk calcium (*see cut*).

Ethyl poured some $75,000-$100,000 into research and built a small pilot plant at Baton Rouge (La.), which turned out about 200 or 300 lbs. of the powder a month. The process was tricky, but in essence, involved the extraction of calcium from a sludge resulting from sodium manufacture. The company was, and still is, well covered with patents; it had the know-how, the raw material and an inviting potential market. The latter was indicated by extensive surveys, economic studies and responses from possible consumers.

All factors pointed to the virtual certainty that Ethyl had a winner in its crystalline calcium, that it would eventually build a commercial plant to supply a multimillion-pound market. But abruptly the program came to a halt, the idea was abandoned. Right now, Ethyl has no thought of reviving production of the fluidized metallic calcium. The reason is clear in this typical comment at that time: calcium could well hit 10-20 million lbs./year consumption—if it were priced in the 30-50¢/lb. range.

Ethyl's rock-bottom selling price, because of the cost of manufacture, had to be a firm $1.50/lb. Interest at that price for the 94-97% pure calcium indicated a not-too-attractive (to Ethyl) 600,000-lbs. market.

Inquisitiveness of possible powdered-calcium users, however—although the project was shelved in 1953—continues to titillate Ethyl.

Ethyl, of course, isn't the only company that could conceivably produce the crystalline metallic calcium. Du Pont and National Distillers (both also sodium makers, *CW, Nov. 14, '53*), have the same by-product, sodium-sludge problem.

But nearest thing to the particle-size of Ethyl's abortive product, and finer than the current widely used lathe turnings (*see cut*), is Nelco Metal's comparatively recent offering of a "nodulized" (about BB-size) material.

Nut-Shell Sum-Up: It all boils down to this: although any company with a source of calcium chloride or calcium ores is a potential producer, unless a U.S.-made metallic product can be developed that can buck magnesium—in price and in uses—it's more than likely Dominion Magnesium will remain dominant over the world markets.

And this, too, is significant: the nearly 15-fold jump in U.S. imports over the past few years clearly points up the ever-widening calcium end use pattern—even at a $2/lb. price.

THE PERKIN-ELMER

INSTRUMENT DIGEST

A condensation of some articles in the Winter issue of THE PERKIN-ELMER *INSTRUMENT NEWS*, a publication of The Perkin-Elmer Corporation, manufacturers of scientific instruments—Infrared Spectrometers, Tiselius Electrophoresis Apparatus, Monochromators, Flame Photometers, Continuous Infrared Analyzers, Amplifiers, Astronomical Equipment, Thermocouples, Lenses, Crystal Optics, Special Designs for the Government.
For further information, write The Perkin-Elmer Corp., Norwalk, Conn.
Regional Offices: New Orleans, Chicago and Washington, D. C.

Norwalk, Conn. | April, 1954 | Vol. 5, No. 2

New Evaluation Program Permits On-the-Spot Trial of Infrared Analysis

Perkin-Elmer has a new "Infrared Evaluation Program" which permits the laboratory to try infrared analysis, as follows:

1. A Model 12-C Infrared Spectrometer will be installed in the laboratory for a 90-day trial period.

2. An experienced spectroscopist will instruct personnel in the operation of the instrument. He will also help set up the specific analyses of interest to the laboratory. Contact will be maintained during the trial period.

3. At the end of the trial period, the organization may purchase the Model 12-C, rent it for an additional trial period, purchase a different model, or, if the trial period is unsuccessful, return the Model 12-C to Perkin-Elmer.

The cost of the program is $450.00 with $200.00 being credited if the instrument is purchased. The new lower-price schedule of the Model 12-C makes the program especially attractive. A Model 12-C may also be rented for $275.00 per month with a portion creditable toward purchase.

All interested in the "Infrared Evaluation Program" are invited to write for further information.

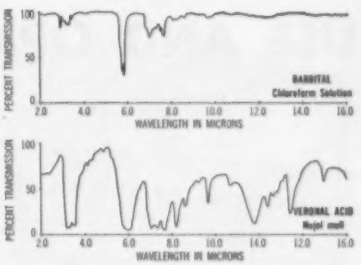
BARBITURATE CHARACTERIZATION BY INFRARED SPECTROSCOPY

by Leo Levi and Charles E. Hubley

Because of their close structural relationship no simple, efficient chemical method of analyzing barbiturates has yet been devised. Infrared spectroscopy is one of the few physical methods which proved to be both expedient and specific.

The present authors found that these compounds all exhibit characteristic bands over the entire fingerprint region when examined as Nujol mulls. Spectra, right, which compare the spectrum of veronal in chloroform and in Nujol, illustrate this point. Both spectra show characteristic N-H and C-H stretching vibration frequencies from about 3-3.6μ and display strong carbonyl absorptions near 6μ. They also exhibit marked C-H bending vibrations from approximately 7.0-7.4μ.

We have found the Nujol spectra of these compounds extremely useful for the identification and characterization of addiction-producing drugs seized by the Royal Canadian Mounted Police. These spectra also proved of great help in determining these compounds in commercial preparations obtained through food and drug inspectors of the Department of National Health and Welfare.



The absorption spectra recorded in this communication were chosen from a collection of IR-data on addiction producing drugs, now being processed as key sort cards by the National Bureau of Standards, for incorporation into their permanent reference catalogue.

Digest of an article appearing in the Winter, 1954 issue of INSTRUMENT NEWS.

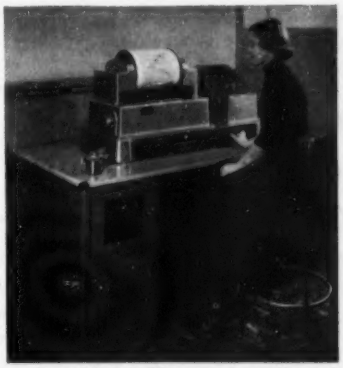
New Field Sales and Service Office at Chicago

On January 4, Perkin-Elmer opened its second field Sales and Service Office. Located at 230 North Michigan Avenue, Chicago, the new office provides the Midwest with the same service and laboratory facilities offered to the Southwest by Perkin-Elmer's New Orleans office.

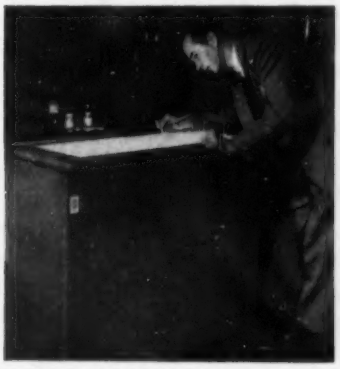
An outstanding feature of the Chicago office is the laboratory-showroom for running sample infrared analyses.

Visitors who wish to submit samples should discuss them first with John H. Rhodes, in charge of the office.

Two New Aids for Spectroscopists



• **New Model 21 console.** All steel construction, save for Formica-topped, solvent-proof space for preparing samples. Provides a dessicated compartment for crystal optics and accessories, two storage cabinets for other accessories, and handy trays for chart paper. Standard desk height.



• **New Viewing Cabinet.** A useful companion to any spectrometer, this new combination light box and spectra storage space provides a smooth, spacious, ground-glass surface, of a size and height convenient to the viewer, where study and comparison of spectra can be made without clutter.

For 8-page INSTRUMENT NEWS send this coupon to:

The Perkin-Elmer Corporation, Norwalk, Conn.

NAME

TITLE

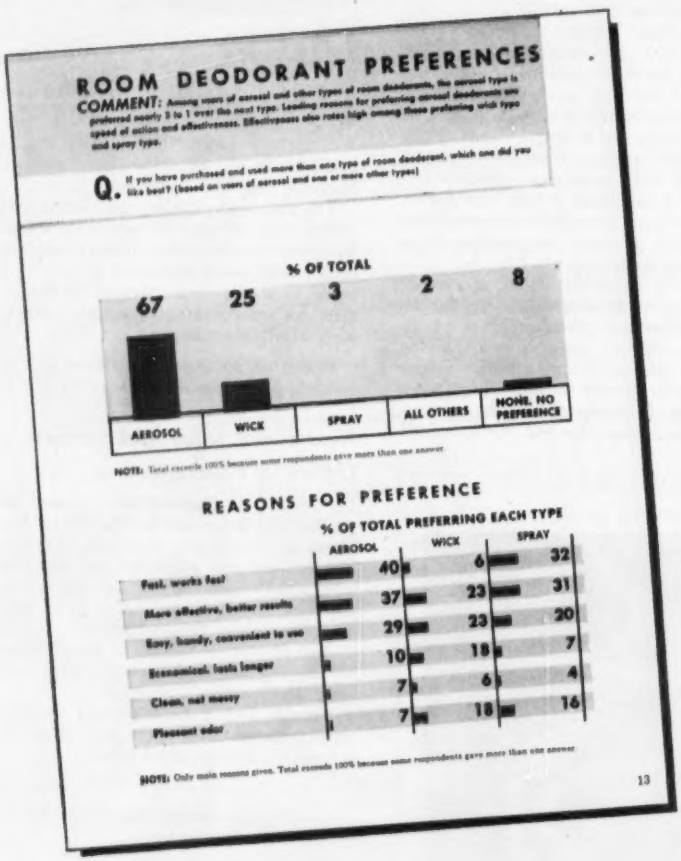
COMPANY

ADDRESS

CW

Latest Du Pont Aerosol

A study of CONSUMER KNOWLEDGE, USE AND OPINION OF AEROSOL-PACKAGED PRODUCTS



Room deodorant preferences. As shown in the graph above—reproduced from the Survey Digest—among users of aerosols *and* other types of room deodorants, the aerosol type is preferred nearly 3 to 1 over the next type. Consumers appreciate the speed, effectiveness and convenience of aerosol-packed products.

Points up Growing Popularity of Pressure-Packaged Products

9 out of 10 families have used one or more aerosol products

Purchase of aerosols continues to show steady increase. It has nearly doubled since 1950. As shown in "The Aerosol Market"—a digest of the latest Du Pont nation-wide study of the market for aerosols—87% replying (of the 2600 families) had purchased at least one aerosol product. In 1950, only 47% reported having purchased aerosols.

7 out of 10 families were completely satisfied with aerosol method

The survey also showed that among housewives who stated that they had used aerosol products, 70% reported complete satisfaction with this modern method of dispensing. Only 2% expressed disappointment with the aerosol they had purchased . . . indicating a very high degree of satisfaction.

Simplicity and ease of using . . . effective results . . . and cleanliness were given as the three leading reasons for being satisfied with the aerosol products.

IT'S FREE!

Market Survey

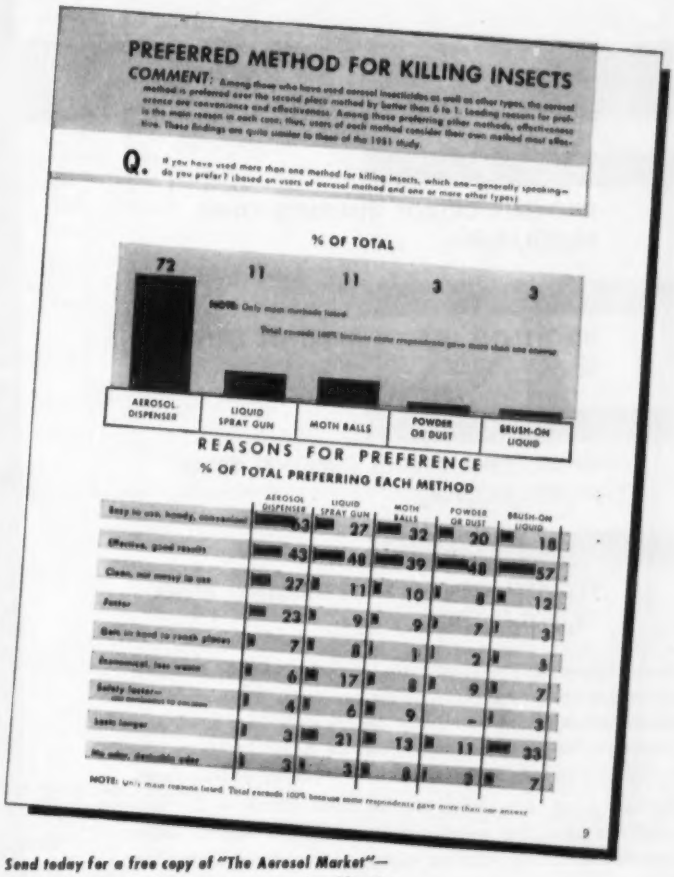
Effectiveness of Aerosol Products One Big Reason for Their Popularity

Aerosol insecticides preferred better than 6 to 1

Those who reported having used both aerosol insecticides and other types, overwhelmingly indicated their preference for aerosol dispensers (as shown in the page reproduced at the right). Again, convenience of use and effectiveness were given as main reasons for being satisfied with the product.

Majority of aerosols packed with "FREON" propellents

Du Pont "Freon"* fluorinated hydrocarbon propellents are used in the majority of aerosols now on the market . . . and there's good reason why. Their versatility as regards pressure and solubility properties makes them adaptable to all types of aerosol products. In addition, they are safe . . . nonflammable, nonexplosive, virtually nontoxic and noncorrosive. If you are thinking in terms of entering this market with a product of your own . . . consult Du Pont for technical help in formulating it with one of of the 25 "Freon" propellent solutions now available.


PREFERRED METHOD FOR KILLING INSECTS

COMMENT: Among those who have used aerosol insecticides as well as other types, the aerosol method is preferred over the second place method by better than 6 to 1. Leading reasons for preference are convenience and effectiveness. Among those preferring other methods, effectiveness is the major reason in each case; thus, users of each method consider their own method most effective. These findings are quite similar to those of the 1951 study.

Q. If you have used more than one method for killing insects, which one—generally speaking—do you prefer? (based on users of aerosol method and one or more other types)

% OF TOTAL

72 | 11 | 11 | 3 | 3

NOTE: Only main methods listed. Total exceeds 100% because some respondents gave more than one answer.

AEROSOL DISPENSER | LIQUID SPRAY GUN | MOTH BALLS | POWDER OR DUST | BRUSH-ON LIQUID

REASONS FOR PREFERENCE

% OF TOTAL PREFERRING EACH METHOD

	AEROSOL DISPENSER	LIQUID SPRAY GUN	MOTH BALLS	POWDER OR DUST	BRUSH-ON LIQUID
Easy to use, handy, convenient	63	27	32	20	18
Effective, good results	43	48	39	48	57
Clean, no messy to use	27	11	10	8	12
Faster	23	9	9	7	3
Gets in hard to reach places	7	8	1	2	3
Economical, less waste	6	17	8	9	7
Safety factor—	4	6	9	–	3
Lasts longer	3	21	13	11	33
No odor, desirable odor	3	3	8	3	7

NOTE: Only main reasons listed. Total exceeds 100% because some respondents gave more than one answer.

9

KINETIC

FREON

REG. U.S. PAT. OFF.

SAFE PROPELLENTS

*"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

DU PONT

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Send today for a free copy of "The Aerosol Market"— digest of Du Pont's 1953 consumer survey. No obligation.

MAIL THIS COUPON NOW

E. I. du Pont de Nemours & Co. (Inc.)
"Kinetic" Chemicals Division, Dept. C.
11496 Nemours Building
Wilmington 98, Delaware

Please send a free copy of "The Aerosol Market" digest.

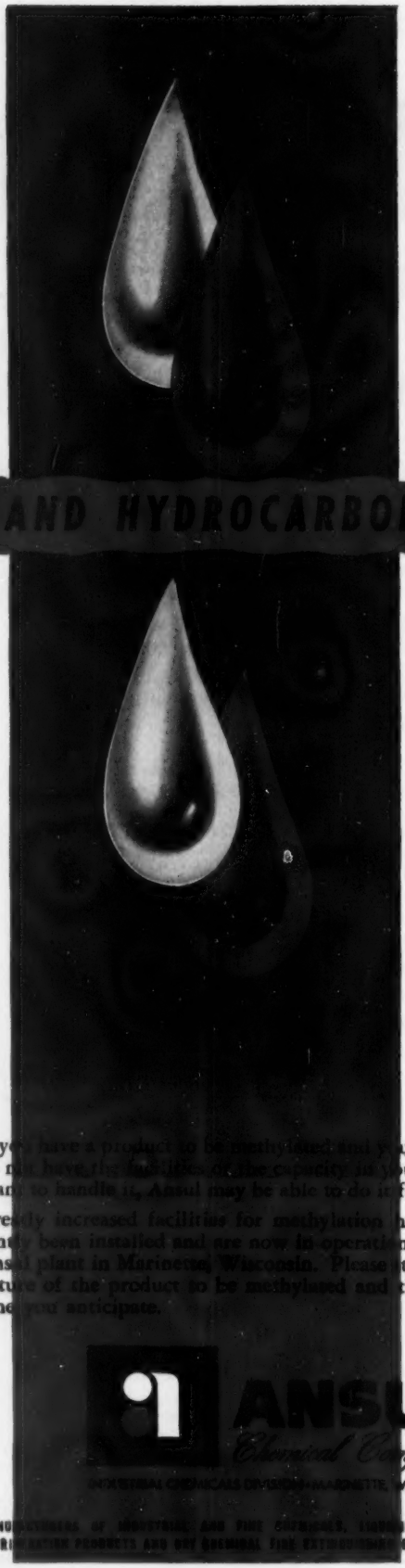
Name_____

Company_____

Street_____

City_____ Zone____ State_____

ANSUL DIMETHYL ETHERS OF POLYGLYCOLS



MISCIBLE IN BOTH WATER AND HYDROCARBONS

ANSUL ETHER-121

ETHYLENE GLYCOL DIMETHYL ETHER
$CH_3OCH_2CH_2OCH_3$

ANSUL ETHER-141

DIETHYLENE GLYCOL DIMETHYL ETHER
$CH_3(OCH_2CH_2)_2OCH_3$

ANSUL ETHER-161

TRIETHYLENE GLYCOL DIMETHYL ETHER
$CH_3(OCH_2CH_2)_3OCH_3$

ANSUL ETHER-181

TETRAETHYLENE GLYCOL DIMETHYL ETHER
$CH_3(OCH_2CH_2)_4OCH_3$

Ansul Ethers of Polyglycols are versatile solvents for both laboratory and certain production processes. *They are completely miscible with both water and hydrocarbons in all proportions.* The solvent characteristics of Ansul Ethers can be varied by changing the dilution with water or hydrocarbons. Here are a few of the many uses for Ansul Ethers: — 1. Solvents; for gases, for metallic sodium reactions and for cellulose esters. 2. As blending agents in emulsion formations. 3. As anti-dusting agents for strong alkalis. 4. As spectrophotometric solvents. 5. To replace ethyl ether where necessary to eliminate inherent hazards.

If you have a product to be methylated and you either do not have the facilities or the capacity in your own plant to handle it, Ansul may be able to do it for you. Greatly increased facilities for methylation have recently been installed and are now in operation at the Ansul plant in Marinette, Wisconsin. Please state the nature of the product to be methylated and the volume you anticipate.

Mail this coupon for additional information.

ANSUL CHEMICAL COMPANY
Industrial Chemicals Division,
Marinette, Wisconsin

Name _____ Title _____

Company _____

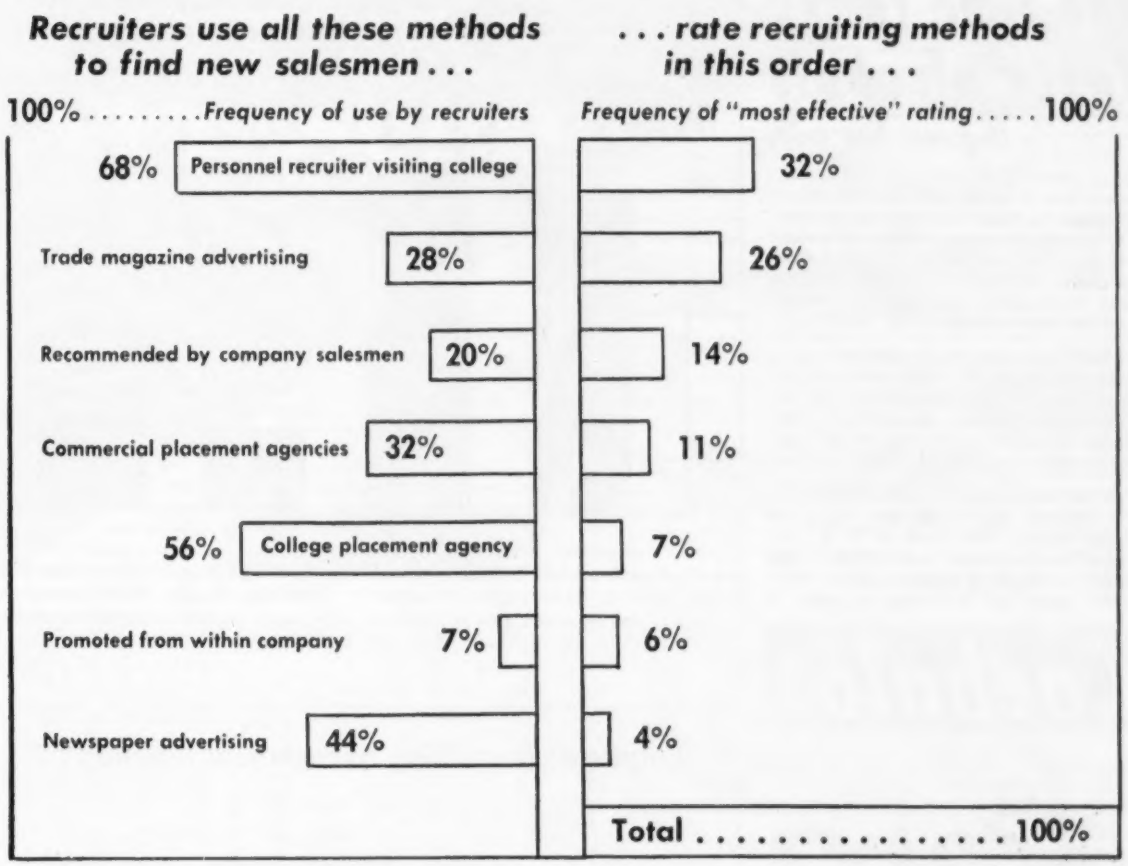
Address _____

City _____ Zone _____ State _____

ANSUL Chemical Company

INDUSTRIAL CHEMICALS DIVISION—MARINETTE, WISCONSIN

MANUFACTURERS OF INDUSTRIAL AND FIRE CHEMICALS, COMPRESSED GASES, REFRIGERATION PRODUCTS AND DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT.


Recruiters use all these methods to find new salesmen . . .
100% . . . . . Frequency of use by recruiters
68% Personnel recruiter visiting college
Trade magazine advertising 28%
Recommended by company salesmen 20%
Commercial placement agencies 32%
56% College placement agency
Promoted from within company 7%
Newspaper advertising 44%
. . . rate recruiting methods in this order . . .
Frequency of "most effective" rating 100%
32%
26%
14%
11%
7%
6%
4%
Total 100%

Manhunt

Not more, but better sales representatives are needed to sell tomorrow's chemicals, say recruiters in latest CW poll.

Trends point toward higher qualifications, more critical screening, longer in-plant training.

Ideal combination for future salesman: 50-50 balance of technical background and sales personality.

In these days of expanded capacity and sharpened competition, locating and hiring new salesmen is taking on added significance. A rising need for representatives who can sell the ever-more-complex chemical products and services is making the job of recruiting more involved than ever before.

Not that there aren't enough men to go around. The nub of the task is quality—not quantity. As one chemical sales manager contended, "There's actually no shortage of salesmen. But to find top producers—that's the real problem."

And CW's latest survey of sales recruiting methods reveals that the average recruiter is well aware of today's changing sales requirements.

Campus Combing: Colleges and universities have long been a prime source of technical manpower. But it's only recently that campuses have been combed intensively for selling talent. The CW poll responses verify that managers, recognizing that tomorrow's sales representative will need a sound head perhaps even more than a glib tongue, are hunting for help with specialized academic background.

This is borne out in the chart above. Although not all companies are currently in the market for additional salesmen, of those who are hunting, 68% send personnel recruiters to college campuses.

And in addition, more than half (56%) of all recruiters maintain live contact with college placement agencies. As to relative effectiveness of the two college routes, however, personal contacts of recruiters bear much more fruit, being named "most effective" of all recruiting routes by 32% of those answering the CW questionnaire. In sharp contrast, only 7% of those queried felt that college placement agencies were their best-of-all source of new salesmen.

Ads and Ads: Emphasis on quality and technical training showed up, too, in the responses concerning non-college recruiting methods.

Example: 44% of recruiters used newspaper advertising as one of their methods, but only 4% admitted that this route lured candidates of the right caliber.

Why wait? Now's the time to try fatty alcohols

—they cost less today

Over twenty-five years ago the makers of CACHALOT brand fatty alcohols set out to make the world's finest fatty alcohols. Today, chem-men agree they have done just that. For you can get the exact characteristics you wish in big tonnage, low cost cetyl, oleyl, and stearyl alcohols and be sure of lot-to-lot uniformity.

Modern vacuum-distillation techniques make CACHALOT *NF, USP, and technical grades outstanding intermediates for detergents, plasticizers, oil additives, stabilizers, etc. And today's low prices make these and other uses profitable for you.*

For the booklet on "Possibilities" write M. Michel and Company, Inc., 90 Broad Street, New York 4, N. Y. For more than a quarter century basic suppliers to chemical manufacturers, their trade name for fine fatty alcohols is

Cachalot

Barg-ing?

for performance . . .
for meeting schedules . . .
for unusual jobs . . .
for a realistic price . . .

Get Dixie's bid!

Complete Inland Waterways bulk service—Petroleum and Chemical Products—also common carrier New Orleans West.

Call or Write

DIXIE CARRIERS INC.

THE MODERN FLEET

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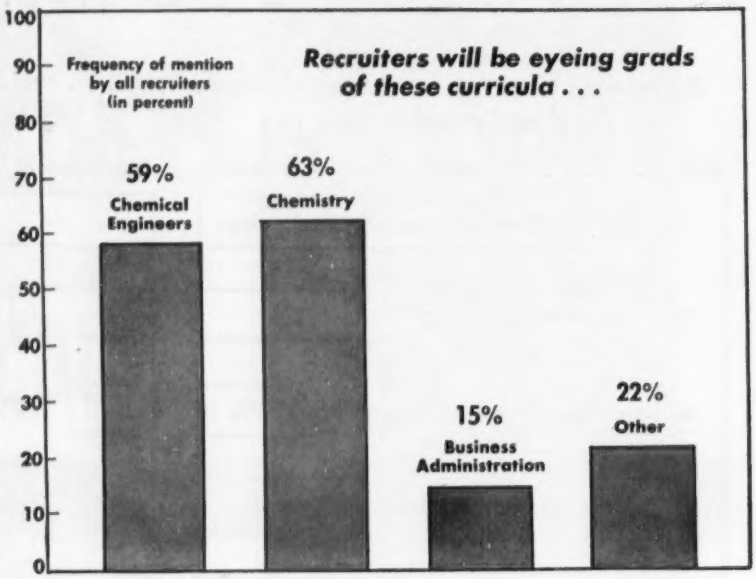
CH-3543

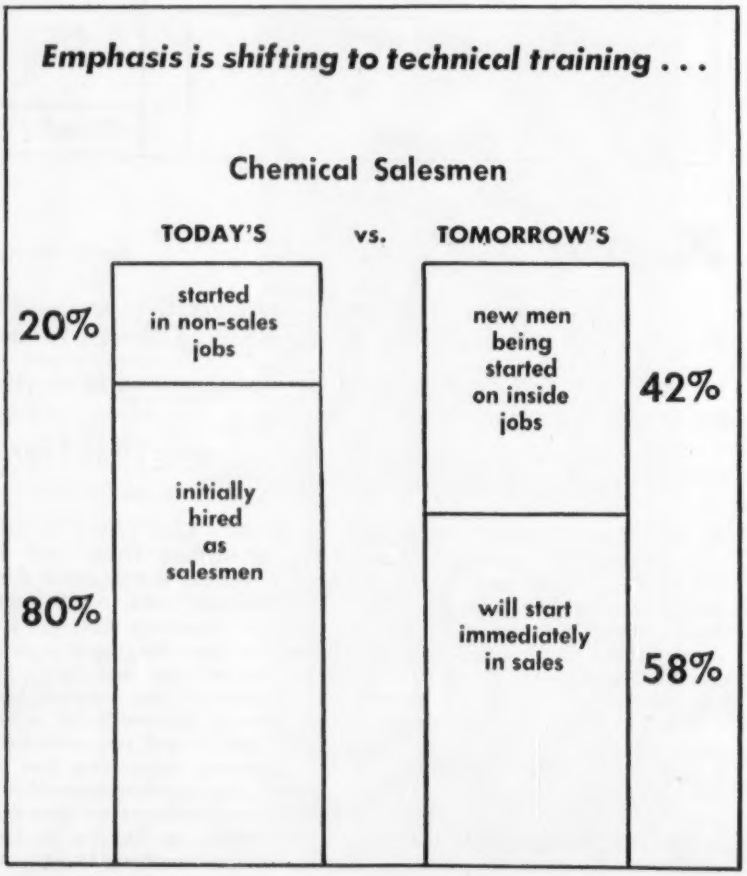
NEW ORLEANS
1422 Nat'l Bank Commerce
MA-6631

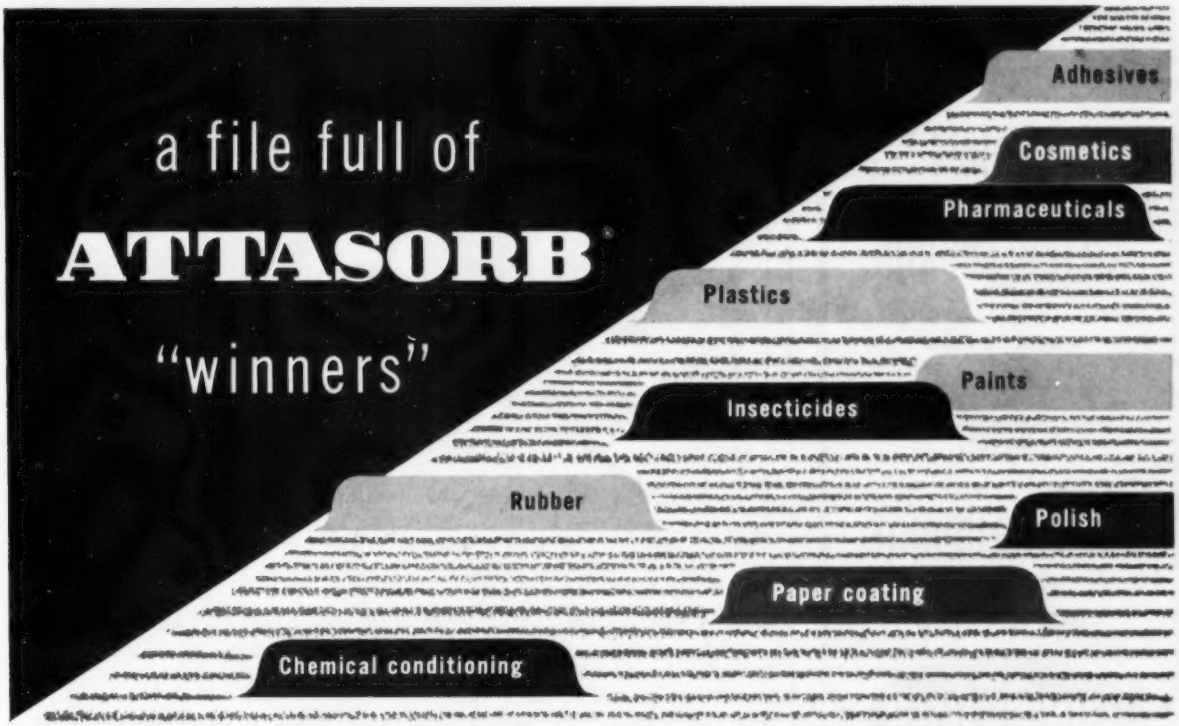
DISTRIBUTION . . . . . .



On the other hand, only 28% placed their faith in trade magazine advertising. Those who did, though, ranked it high in the list of "most effective" methods, naming it 26% of the time.

Personal Touch: Also bearing out the trend toward recognizing technical training: shift away from hiring





Here's the success story of ATTASORB—the low-priced, ultra-fine adsorptive material we developed from the mineral attapulgite, a hydrated magnesium aluminum silicate.

While commercially available less than a year, ATTASORB has caught on like wildfire throughout a wide range of industries. It's done this simply because it has met specific needs. *Chemical processors* use ATTASORB for positive conditioning protection against caking and agglomeration . . . in the *paper* field it's used for coatings . . . *polish* manufacturers find it well-suited as a polishing and suspending agent in various types of formulations . . . tests prove ATTASORB an excellent reinforcing agent in *rubber* and flatting agent or pigment extender in *paints* . . . it's an effective bulking agent for *insecticides* . . . and *plastics* formulators and molders take advantage of its ability to body. It's proven useful, too, as an ingredient in pharmaceuticals, as a base for dry cosmetics, as an emulsifier for pastes and creams, and as a thickener in adhesive compositions.

Reasons for ATTASORB's popularity? Picture a material that's highly sorptive (active surface area, 13 acres per pound), chemically inert, grit-free and light in weight. Add to these advantages a fine, needle-like particle shape, low bulk density (13-15 lbs./cu. ft.), excellent anti-caking and buffering properties, and complete compatibility and dispersibility in water and organic systems. Then consider an unusually low price of 3c to 3½c a pound in carload lots, depending on freight charges.

Let ATTASORB do for you what it's done for so many others! We'll be glad to furnish you with a generous sample, descriptive literature and technical assistance. For example, if you have chemicals that tend to cake or agglomerate, or surfaces that are "tacky", send us samples. We'll condition them with ATTASORB . . . return them to you for evaluation and storage tests.

ATTAPULGUS Minerals & Chemicals Corporation

DEPARTMENT A

210 WEST WASHINGTON SQUARE, PHILADELPHIA 5, PA.

SODIUM
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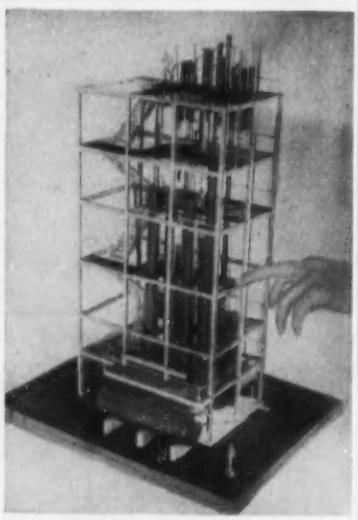
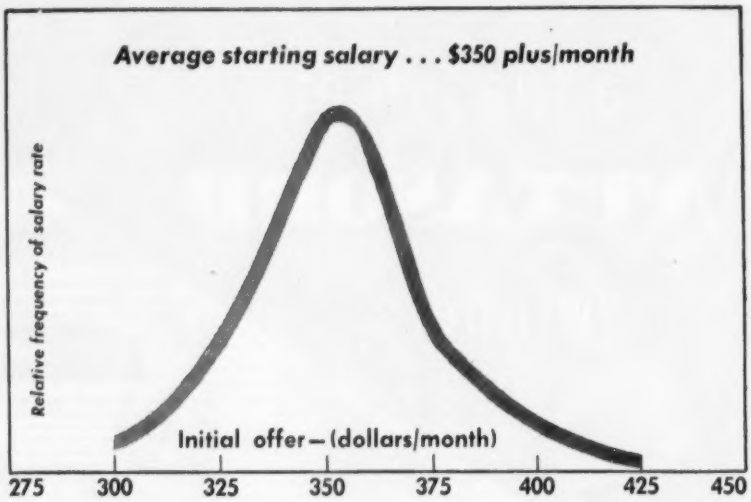


Savings on scale models are frequently 10 to 30 times their cost. Savings are made in design, construction, sub-contracting, and operator training. In addition; better, safer design is obtained resulting in lower operating and maintenance costs, and earlier plant start-up.

We build about 100 models/year of process plants and oil refineries representing some $400,000,000 of new construction. Our engineers can build the model *ahead* of the blueprints, working in your design office.

INDUSTRIAL MODELS, INC.

2311 Sconset Rd. Wilmington 3, Del.
1220 W. 6th St. Cleveland 13, Ohio
67 Fulton St. New York 7, N. Y.



sales trainees as such.

Some companies, while definitely interested in canvassing campuses for nonsales help, maintained that they preferred training their sales force in their own ways of doing business before giving them a chance to call upon customers.

Replies on this point ran like this:

- "We raise our own."
- "We shift men with 3 to 5 years' plant experience into sales work."
- "In the past we have hired salesmen. In the future we will screen them from in-the-plant workers."
- "We prefer engineers with experience in our own plants. We hire no salesmen as such."

Slide Rules and Test Tubes: This trend toward stressing technical training shows up in both charts on page 98. First choices for chemical salesmen runs preponderantly toward graduates of either chemical engineering or chemistry courses. A few repliers accorded business administration studies some weight but only as an added desirable factor.

Actual sales force statistics bear out this trend toward training. In reply to the question, "What percent of your present sales force were hired initially as salesmen?", an average of the responses showed that 80% of today's men started in sales.

But the future picture will change considerably. Only 58% of tomorrow's salesmen are being hired to start out on the road. The remaining 42% (*chart, bottom p. 98*) will begin working in production and other nonsales spots, eventually to be screened for sales positions.

The value of sales personality is by no means being discounted. Employers, realizing the criticality of sales responsibilities, are hoping and looking for men with a combination of training and personality.

Some replies:

- "Both are of equal importance to use. This makes selection difficult but pays off in the long term."
- "Both are given a lot of weight. A blending of the two about covers it."
- "Both are absolutely required."

For Value Received: Employers are certainly willing to recognize the value of high-quality sales material.

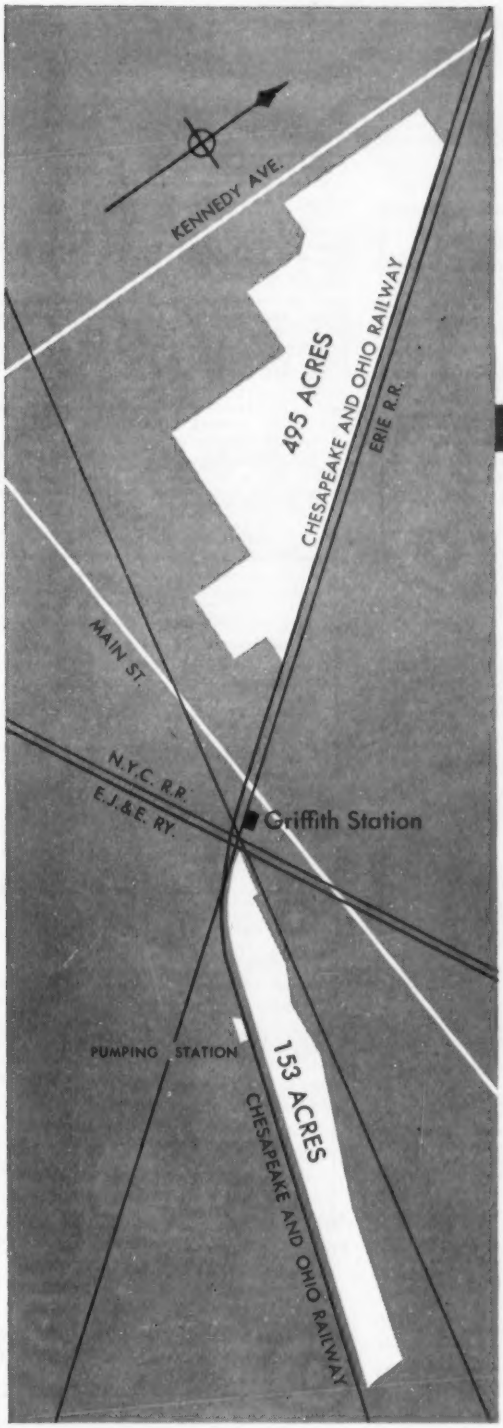
A tabulation and charting of salaries being offered to college-fresh candidates reveals that the majority of companies are making bids that compare favorably with amounts offered for nonsales workers. With the range of offers extending from $275 to $425/month, the usual rate centers at $350 to $360.

Recruiters firmly declare that they will not entertain any "bidding up" of salary offers. On the other hand, if a man with several years' experience in chemistry is interested and fitted for sales, the average employer is willing to increase the offer, on the basis of "value received."

Same Target: Prospect screening methods likewise point up the same trend toward a growing need for a combination of technical training and sales aptitude.

For instance, aptitude tests, while still being employed by a minority of companies (*CW, Jan. 23, p. 42*) are becoming increasingly popular. Probable reason: recruiters, driven to hunt raw sales material among college graduates, welcome any indicator that candidates possess not one, but both requirements for fulfilling the sales shoes.

152—S



Why not go where the labor is?

From the chiefly residential town of Griffith, Ind., hundreds of industrial workers commute daily to Hammond, Gary, East Chicago and Whiting. Many of these people have moved out to the Griffith area to get away from the congestion and less pleasant living conditions in these older industrial centers. Undoubtedly these workers would welcome jobs closer to their homes.

In addition to its favorable labor situation, Griffith offers exceptional transportation advantages. It is the junction point for five railroads — Chesapeake and Ohio, Erie, New York Central, Grand Trunk and Elgin, Joliet and Eastern (Chicago Outer Belt Line).

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P 2381 Chemical Week
330 W. 42 St., New York 36, N. Y.

Positions Wanted

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Chemical engineer with post graduate studies. Age 35. 13 years' experience with a major pharmaceutical company as technical and administrative executive in all phases of manufacturing, packaging, quality and production control in antibiotics, parenterals, tablets, liquids, creams and ointments. Excellent record in cost and inventory reduction. Experience includes reorganization, initiation of operations, selection and training of personnel, and formation of policy in both domestic and export fields. Desires change to challenging position with growing and progressive company in the pharmaceutical or related field.

PW1541 Chemical Week
330 W. 42 St., New York 36, N.Y.

Have more than twenty years executive experience in chemical compound manufacturing. Thoroughly conversant with all phases of management. Have specialized in selling. Have intimate contacts in railroad field. Have passed sixtieth birthday. Seek connection where experience, integrity, intelligence and willingness to accept responsibility are of more value than youth. PW-2251, Chemical Week.

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Buffalo Inspection

A crackdown in Buffalo on warehouses improperly storing flammable materials is under way, following two spectacular warehouse fires in the city.

Fire Commissioner Charles Halloran indicated his staff is anxious to determine if a revision of the fire prevention code is necessary. He emphasizes that inspectors will review storage of chemicals and chemical products that have been developed since the code was adopted with an eye to changing outmoded regulations.

Sales Film: Dun & Bradstreet offers a new 16-mm. sound film, "Of Time and Salesman." Subject: day-by-day management of the salesman's selling time.

•

New Products: Now available in commercial quantities:

• Bigelow Fiber Glass Products (New York): a woven glass roving fabric, "Rovcloth."

• Poly-Seal Corp. (New York): a plastic screw cap with a polyethylene cone liner for glass, metal or plastic containers.

• American Cyanamid Co. (New

Big Box for Big Buyers

"BIGGEST" OBJECT of attention in Monsanto's exhibition at the recent National Packaging Exposition in Atlantic City was this new 1,000-lb. palletized cardboard container. Made of 600 Mullen test fiberboard, the double-walled box measures 39x30½x40 in. on the outside. Especially developed for shipping plastic molding powders, the carton represents Monsanto's approach to packaging. As spelled out by Ted Lawton, assistant sales manager, customer service is nowadays as important as price, quality, or delivery.

Previously, the powders were shipped in 210-lb. drums and later in 50-lb. multiwall bags. But to the relatively few large-quantity users, the small units meant multiple ordering, complex and expensive material handling. Recognizing this, Monsanto men put their heads together, came up with the jumbo container.

According to Lawton, these customers gain two ways by using the big boxes: less handling, less storage space are required:

• One man and a fork truck can unload a freight car of 60 boxes in two hours. An equivalent quantity in bags requires eight hours; in drums, five to ten hours.

• Boxes need 83 sq. ft. less room than drums to store 40,000 lbs. of powder, and 3 sq. ft. less than bags.

The consumer is not the only beneficiary. Monsanto gains, too, from its own clipped handling and space requirements.

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• Borg-Warner Corp. (Chicago): a high-impact thermoplastic styrene-type resin, "Cycolac."

• American Molding Powder & Chemical Corp. (Brooklyn): a high-impact polystyrene concentrate "Ampalloy."

• Sharples Chemicals Inc. (Philadelphia): emulsifier intermediate isopropylaminoethanols (IPAE).

•

Distribution Expansions: New marketing shifts in the news:

• E. C. Wood Co. has opened an office in Savannah, Ga., will be manufacturer's representative for naval stores and other chemical products.

• Diamond Alkali's Chlorinated Products Div. has opened a new office in Atlanta, Ga.

• Brown-Allen Chemicals, Inc. (Staten Island, N.Y.) has appointed M. B. Sweet its Chicago sales agent.

• R. E. Carroll, Inc. (Trenton, N.J.) has named Paul J. Pauls, Inc., its exclusive export-import agent.

• Plax Corp. (West Hartford, Conn.) has appointed Peter & Co. as distributor for western Kentucky and southern Indiana.

Peanuts to Prints

ALTHOUGH it may not be obvious, center of interest here is the "sari" that student Jill Anderson is wearing. It's half silk, half "Ardil," a fiber made of peanuts, and all a part of the forthcoming British Industries Fair at London and Birmingham, May 3-14.

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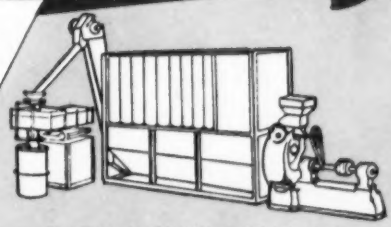

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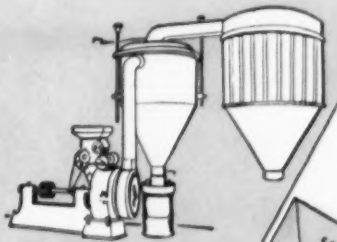

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